AUDIT OF ADHERANCE TO PERMANENT CHILDHOOD HEARING IMPAIRMENT INVESTIGATIONS AND ASSESSMENT GUIDELINES IN SLIGO UNIVERSITY HOSPITAL.

CM Stephens[1], E Nechita[1], P Barr[1,2], N Patil[1,3], D Gallagher[1]
[1]Paediatric Department , Sligo University Hospital, Sligo, [2]Audiology Services, Sligo University Hosputal, Sligo, [3]ENT Department, Sligo University Hospital, Sligo,

The National Newborn Hearing Screening was introduced in 2013. Currently there are no national standards for aetiological assessment and investigations. Tertiary centres refer to British Association of Paediatricians in Audiology (BAPA) guidelines.[(1,2,3,4)]Since 2013, thirteen infants have been identified in this region.

Aims:

(1) Identify infants picked up by National Hearing Screening in the region.
(2) Review if investigations had been performed.
(3) Identify investigations that are not being performed.
(4) Examine user- friendliness of recommendations.

Methods: This was a retrospective audit, listing all infants identified in the area.
Hearing loss was divided into four categories; Unilateral, Mild, Moderate, Severe to Profound.
Medical records, haematological and radiological computer systems were used to collate data.

Results:

RELEVANT INVESTIGATIONS	UNILATERAL (2)	MILD (2)	MODERATE(1)	SEVERE PROFOUND (13)
CORRECT REFERAL TO PAEDIATRICS	0%			
CMV	0%	0%	0%	62.50%
HISTORY		100%	100%	75%
EXAMINATION		100%	100%	75%
DEVELOPMENATL ASSESSMENT		100%	100%	75%
AUDIOGRAM		100%	100%	62.50%
OPTHALMOLOGY		0%	0%	75%
URINE DIPSTICK		0%	0%	75%
2ND DIPSTICK		0%	0%	25%
CONNEXIN GENE			0%	37.50%
IMAGIING			0%	25%
GENETICS			0%	25%
ECG				62.50%
LEVEL II INVESTIGATIONS				
HAEMATOLOGY/ BIOCHEMISTRY				62.50%
AUTOIMMUNE				25%
METABOLIC				50%
CHROMOSOMAL TESTING				0%
RENAL ULTRASOUND				25%

Conclusions: There are discrepancies between Irish recommendations and BAPA. [(1,2,3,4)]
BAPA uses three categories; Unilateral, mild-moderate and severe profound hearing loss, Irish centres recommend four. [(1,2,3,4)]

BAPA advise more investigations for unilateral hearing loss. . [(1)] Genetics referral was recommended as a Level I investigation in Severe-Profound hearing loss. . [(3)] Timing of investigations, details to include in assessment, and dipping of urine twice is recommended.[(1,2,3,4)]This differs in Irish recommendations.
Authors recommend that a checklist for assessment and investigation is placed in charts at diagnosis and that a shared database is created for professionals involved

British Association of Audiovestibular Physicians. Guidelines For Aetiological Investigation Into Unilateral Permanent Childhood Hearing Impairment, April 2015 (2) British Association of Audiovestibular Physicians. Guidelines For Aetiological Investigation Into Mild To Moderate Permanent Childhood Hearing Impairment, April 2015 (3) British Association of Audiovestibular Physicians. Guidelines For Aetiological Investigation Into Severe to Profound Permanent Childhood Hearing Impairment, April 2015 (4) British Association of Audiovestibular Physicians. (5) Guidelines for Investigating Infants With Congenital Hearing Loss Identified Through The Newborn Hearing Screening.

PAEDIATRIC INFLUENZA ACTIVITY 2015-2016 SEASON: CLINICAL PRESENTATION, COMPLICATIONS AND BURDEN OF DISEASE IN A HOSPITAL BASED SETTING

A Cleary[1], G Ryan[1], D Keady[2], NM Allen[1], E Moylette[1]
[1]Academic Department of Paediatrics, National University of Ireland, Galway, Ireland.
[2]Department of Microbiology, University Hospital Galway, Galway, Ireland.

Aim:
During 2015-2016 an increase in the number and severity of influenza cases was noted within the Paediatric Department of UHG. We aimed to 1) assess the influenza presentation, complications and outcome for the 2015-2016 influenza season, 2) compare the influenza caseload from 2014-2015 season to 2015-2016 season, and 3) determine the proportion of acute admissions and workload burden related to influenza infection for each period.

Method:
Retrospective review: All positive influenza results were determined by the Microbiology Department, UHG for the same 4 month period in both the 2015-2016 and 2014-2015 influenza season. The Hospital In-Patient Enquiry (HIPE) system was used to ascertain total paediatric medical admissions for the duration of each 'influenza season'. Medical records, daily handover sheets and the electronic discharge system were reviewed to determine clinical presentation, co-morbidities, treatment and outcome.

Results:
The first positive paediatric influenza result was reported on December 4th 2015; the last on April 11th, 2016; total number during 2015-2016 was 98 compared to 28 during 2014-2015. During 2015-2016, 71 of 98 cases were admitted (72%) vs. 13 of 28 (46%) during 2014-2015, remainder discharged from ED. In 2015-2016 50% of influenza cases were accounted for by Influenza A vs. 75% in 2014-2015. During the 2015-2016 'flu season' influenza accounted for 10.4% of the paediatric medical case load compared to 1.4% during 2014-2015. 68% of influenza patients were <5years. Clinically the most common presenting complaints were respiratory symptoms and fever. Average length of stay was 2 days (range:1-8days). Four cases had severe complications requiring ICU admission and transfer to tertiary centres. There was one death.

Conclusion:
There was a significant rise in the number of influenza positive swabs, number of admissions and severity of cases in the 2015/2016 winter period. This supports the case for universal influenza vaccination for all pre-school children.

RENAL OUTCOME IN HENOCH-SCHONLEIN PURPURA IN CHILDREN: 10 YEARS RETROSPECTIVE STUDY

D Bux[1], MI Riazat[1], A Das[1], N Goggin[1]
[1]University Hospital Waterford

Aims To evaluate renal outcome in children with HSP, admitted during ten years in Paediatric unit at University Hospital Waterford

Methods Retrospective review of patient's files, admitted during 10 years study period at University Hospital Waterford with clinical diagnosis of HPS. Manual and electronic data were collected and analysed

Results Sixty six patients were admitted during the study period (2005-2015). Out of 66 patients, females were 35 & male 31. Sixty (90%) children were between ages 1-10 years. Seasonal variation was very evident, 50 patients (83%) were diagnosed between October to April. Purpuric rash was found in 100% of cases. Combined Rash & joint involvement was noticed in 68%.Lower limb joints, mainly ankle was involved in 41 (62 %). Renal involvement was present in 14 (21.2%). Ten patients (15%) had haematuria and 4 (6%) had proteinuria only. Abdominal pain was present in 4.5%, Intussception in 4.5% and scrotal swelling in 3%. Four (6%) were referred to Nephrology team at OLCHC Dublin.

Conclusion HSP is the most common form of vasculitis in children. Males and females were almost in equal proportion. Ninety percent of the patients were between 1-10 years. Renal involvement was observed in 21.2% of patients in the form of hematuria and proteinuria. All of the patients had normal renal function test. Four (6%) patients required referral to nephrology team in OLCHC, Dublin.

A REVIEW OF REFERRALS FOR MEDICAL ASSESSMENT FOLLOWING CHILD SEXUAL ABUSE (CSA)

S Tabassum[1], E Curtis[1], S Harty[1]
[1]Department of General and Community Paediatrics, Our Lady's Children Hospital, Crumlin, Dublin, Ireland

Background:

Child sexual abuse (CSA) is an international public health issue with significant effects on psychological functioning[1]. A comprehensive medical assessment is essential. The Ferns 4 report (2009) and Mott McDonald report (2011) recommended the establishment of Children's Sexual Assault Treatment Units (CSATU) regionally[2,3,4]. Children referred from Greater Dublin area with allegation of CSA are seen at the Laurels clinic, OLCHC. However, no formal arrangement exists for the provision of acute forensic assessment following allegation of recent sexual assault in this region.

Aim

To review referrals for medical assessment following child sexual abuse over a 1 year period.

Method

Retrospective chart review.

Results:

Forty two children attended the clinic between September 2014 and October 2015, 6 cases (Non- CSA) were excluded (N = 36). Twenty seven (75%) were female & 9 (25%) were male. Mean age was 8.2 years (range: 2-15y). Thirty children (83%) were pre-pubertal. CSA was acute in 10 (27.7%) historical in 26 (72.2%).

Referral source was: Gardai 19 (52.7%), medical colleague 11 (30.5%), TUSLA/other service 6 (16.6%). All referrals were from Dublin & surrounding counties. Seventy percent (7/10) acute referrals for forensic assessment were seen within 48-72 hours of notification, remainder within 7 weeks.

Alleged perpetrator male 100%, adult: 19 (52.7%), adolescent: 11 (30.5%), unknown 6 (16.6%). Allegations included vaginal, anal & oral penetration. Twenty three (64%) children disclosed to mothers.

Examination was normal in 24 (66%) and non-specific in 12 (33%). Photo documentation (colposcopy) performed in 29 (80.5%). STI screening performed in 26 (72.2%). Hepatitis-B vaccine was administered to 15 children (41.6%). Eighteen (50%) attended for follow-up.

Conclusion:

A significant number of children referred for acute forensic assessment are not seen within the recommended time frame. The recommended CSATUs need to be established urgently to improve service delivery to best practice international standards.

Reference: 1. Carole Jenny MD, final report from AAP. Evaluation of children in primary care setting when sexual abuse is suspected. Pediatrics 2013(132)e558 2. MOTT MACDONALD REPORT : National Review of Sexual Abuse Services for Children and Young People final report by HSE June 2011 3. HSE (HSE 2009c). Report of the Ferns 4 (Children) Working Group: Assessment, therapy and counselling needs of children who have been sexually abused, and their families. 4. Report of FERNS 4 Steering Committee 2014.

FEVER PHOBIA: PARENTAL PERCEPTIONS AND MANAGEMENT OF PYREXIA

KN McCarthy[1], R McNamara[1], I Okafor[1]
[1]Department of Emergency Medicine, Temple Street Children's University Hospital, Dublin 1, Ireland

Aim

The aim of the study was to determine parental definition and management of pyrexia, gain insight into the acceptability of fever education to parents and to identify areas where parental education would be of benefit.

Methods

A qualitative questionnaire based study was undertaken. A single interviewer administered 100 questionnaires using standardized phrasing to parents attending an Emergency Department.

Results

Parental definition of fever ranged from 36.5 to 40^{o}C and 60% of parents define fever at a different limit than defined in ICD-10 (38^{o}C). 46% of parents/guardians reported that they do not worry more about fever in infants <3 months.

With regard to management of pyrexia, 52% of parents felt that it was not safe to use Paracetamol and Ibuprofen in combination. Reported dosing schedules for Paracetamol were inappropriate in 62% and for Ibuprofen in 57%. 21% of parents feel that all children with fever should be treated with antibiotics and 22% immediately seek medical attention if they perceive their child has a fever.

64% of parents would describe themselves as fever phobic and 60% are not confident in their ability to manage their child's temperature at home. 29% of patients had previously received education about fever in children. There is a significant positive correlation between having received fever education and confidence in managing fever at home ($r=0.6$, $p=0.04$). 99% of those interviewed felt education would be of benefit.

Discussion

Fever phobia is a common phenomenon among parents and guardians of children attending the emergency department. Parents lack confidence in managing fever at home and there are many misconceptions among parents about fever and its management. Education on this topic is indaequate and 99% of parents would welcome formal education.

CONGENITAL ANOMALY CASES IN A GENERAL HOSPITAL OVER A 15 MONTH PERIOD; CORRELATION WITH ANTENATAL FINDINGS ON ULTRASOUND.

M Murphy[1], P Curran[1]
[1]Department of Paediatrics, Portiuncula Hospital, Ballinasloe, Galway

Aims: To identify babies born with congenital anomalies and review whether anomaly scans were performed antenatally.

Methods: Computerised databases were searched for infants born with a congenital anomaly in PHB between 01/08/2014 and 30/11/2015. Discharges from SCBU and the paediatric ward were included. Once cases were identified, maternal notes were reviewed to see if anomaly scans had been performed. An excel spreadsheet was designed to collect and record data.

Results: During the study period 25 babies with anomalies were identified using our search criteria, however 5 were excluded as they did not have a congenital anomaly, leaving 20 babies in our study. Of the 20 babies born with congenital anomalies, 5 died in the neonatal period: 2 with fatal genetic conditions, 2 with cardiac anomalies and one with a gastrointestinal anomaly. One of these mother's had had an anomaly scan.
Reviewing all maternal notes, all women had early dating scans but only 5 had anomaly scans. In the absence of universal anomaly scans, local criteria for anomaly scans have developed, and a further 3 should have been offered a scan. Of the cases included, three had abnormal scans, which correlated with postnatal findings.

Conclusion: In Ireland the performance of anomaly scans is not universal and there is no national guideline in place. In PHB, most women have dating scans, and one third have anomaly scans as per local guidelines.

Our study highlighted that we did not have an appropriate system in place for identifying cases with abnormal scans. There was no data on babies who had abnormal anomaly scans referred for delivery in tertiary units. This highlights the need for an official register to be put in place to ensure our information is comprehensive, antenatally and postnatally. Some of these babies may have benefitted from tertiary centre delivery if identified appropriately.

INFANT FEEDING PRACTICES AMONG OVERWEIGHT AND OBESE CHILDREN ATTENDING THE W82GO WEIGHTLOSS PROGRAMME

MM Muldoon[1,2], AC Coughlan[1], NK Kelly[1], SS Sugrue[2]
[1]Research Department, Temple Street Children's University Hospital, Dublin, Ireland
[2]School of Biological Sciences, Dublin Institute of Technology, Dublin, Ireland

Aim: Examine infant feeding practices amongst overweight and obese children attending the W82GO programme- a hospital based paediatric weight loss programme.

Methods: Data from all W82GO participants, from 2010 to 2015, were reviewed retrospectively. Birth weight, gestational age, age of initial W82GO consult, breast and/or formula feeding and weaning details were examined. Deprivation status was determined based on home addresses and electoral districts. Overweight and obesity categories were defined using the WHO BMI SDS cut-offs. Statistical analysis was carried out using SPSS. A p value of <0.05 was considered to be statistically significant.

Results: A totalof 153 patients were examined. Within this paediatric cohort 29% (n42) were overweight, 58% (n83) were obese and 13% (n19) were very obese. Only 35% of the cohort were breastfed; 68% breastfed for 0-20 weeks, 22% for 21-40 weeks, 4% for 41-60 weeks and 6% for > 61 weeks. Thirty-seven percent were weaned before 17 weeks, 54% at 18-26 weeks and 9% were weaned later than 26 weeks. No relationship was found between the BMI SDS at initial assessment and breastfeeding duration (r=0.002) or weaning age (r=0.083). Of those who attended W82GO, 35% resided in highly deprived areas, particularly those in the Dublin area. Breastfeeding rates were lower than the current national rate of 51% (Growing up in Ireland, 2015) while similar to data reported here 50% of children are weaned outside of national recommendations.

Conclusion: Obese children in this study were less likely to be breastfed in comparison with current Irish breastfeeding rates while nearly half of the study population were weaned outside of the national guidelines. Of those attending this weight loss programme, over one third was found to be from the most deprived areas of the country. Further research exploring the relationship between breastfeeding, weaning and obesity is warranted.

AN AUDIT OF BASIC LIFE SUPPORT TRAINING FOR PARENTS FOLLOWING APPARENT LIFE THREATENTING EVENTS (ALTE) IN EARLY CHILDHOOD.

WL Macken, N Clarke, D Coghlan, N Montasser
[1]General Paediatrics, AMNCH, Dublin, Ireland

Aims: The aim of this study was to assess the rate of BLS training among parents of infants admitted with ALTE. Additionally, we reviewed parents experience post-discharge (use of training post-discharge, the effect of training on parental anxiety, interest in re-training and use of non-medical home monitoring equipment).

Methods A review of the hospital's Parent BLS Database was performed. Patients over 12 months at time of event were excluded. Cases were reviewed and parents were contacted by phone. Verbal consent was obtained at the time of initial training and again during phone interview.

Results 25/34,000 presentations were diagnosed as 'ALTE' in AMNCH ED in 2015. 17/25 (68%) patient's guardians were trained over 2015. 13/17 were contactable for interview. 11/13 (85%) parents were trained by nursing staff in the hospital during admission. More than one guardian was trained for 10/13 (80%) patients. 1 parent had received prior training. 13/13 parents reported an improvement in anxiety following training, although 6/13 (46%) felt less confident 6m following training. A repeat event occurred in 2/13 (15%) patients and both used training appropriately. 7/13 (54%) parents had started using a non-medical grade respiration monitor. 13/13 parents expressed interest in retraining.

Conclusion The rate of parental training was 68%. This falls short of the AAP's guidance that all parents should be trained.(1) Positively, 85% of parents included in the study received training prior to discharge and more than one guardian was trained in 80% of instances. 100% of parents felt that training improved their anxiety post-discharge, however, this effect waned to 54% 6 months post training. Recurrence of events among patients was low at 15%, and training was used effectively. 54% of parents were using non-prescribed apnoea monitors following discharge. We recommend increased staff training in BLS training delivery and are arranging group re-training for parents.

(1) Tieder JS et al Brief Resolved Unexplained Events (Formerly Apparent Life-Threatening Events) and Evaluation of Lower-risk Infants. Paediatrics. 2016; 137(5)

SCHOOL-AGED CHILDREN BORN EXTREMELY PRETERM HAVE ALTERED PATTERNS OF ACTIVATION IN LANGUAGE REGIONS DURING A FUNCTIONAL MRI STORIES LISTENING TASK COMPARED TO TERM COUNTERPARTS.

Maria E. Barnes-Davis, MD, PhD, Stephanie L. Merhar, MD, MS, Claudio Toro Serey, BA, Scott K. Holland, PhD, Darren S. Kadis, PhD
Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue Cincinnati, OH 45229-3039 USA

BACKGROUND: Premature infants remain at significant risk for impairment in cognition and language despite great improvements in morbidity and mortality of the smallest and sickest babies. Currently, imaging and testing in infancy has limited value for predicting language and academic performance in childhood and beyond. Preterm children may rely on alternate pathways to process language. In this study, we investigate language network representation in children born preterm versus term controls.

METHOD: Eight children born extremely preterm (less than 28 weeks gestation and without known neurological or language disorder) aged 4 to 7 years and 15 age-matched controls participated in this study. All participants completed a brief neuropsychological assessment with standardized instruments prior to functional magnetic resonance imaging (fMRI) scanning. While in the scanner (3T Philips Achieva, Andover, MA) children listened to narrative stories and speech-shaped noise. Activation patterns for children born preterm were compared to those of typically developing controls.

RESULTS:

Both groups showed expected pattern of bilateral posterior temporal activation for stories listening versus noise. Term children have more activation in canonical language areas (left inferior frontal and superior temporal cortex, $p<0.001$) while preterm children have generally more diffuse activation in response to language stimuli. This suggests that extremely premature birth challenges the developing language network resulting in long-term adaptations to brain-language networks.

Figure 1: Activation during stories listening versus noise for all.

Figure 2: Increased activation in control participants versus preterm during stories listening versus noise.

CONCLUSION:

Children born very preterm have atypical lateralization and altered patterns of brain activation as indexed by fMRI compared to their term controls. In particular, they have decreased activation in the canonical language areas of the left frontal and temporal lobes. It is unclear if this diminishes the redundancy and associative processing in early networks thought to confer the "pediatric advantage" to acquired brain injury or if it reflects immaturity of the developing brain. Connectivity analyses to elucidate possible compensatory alterations in language network representation are underway.

11.30-11.40 – Friday 23rd September – US Travel Award Winner

ASSOCIATION BETWEEN *FLT3*-ITD ALLELIC RATIO AND MINIMAL RESIDUAL DISEASE IN PEDIATRIC ACUTE MYELOID LEUKEMIA

Katherine Harris MD, Stanley Pounds PhD, Dario Campana MD, PhD, Lei Shi PhD, John Choi MD, PhD, Sheila Shurtleff PhD, Susana Raimondi PhD, Ching-Hon Pui MD, Hiroto Inaba MD, PhD, Jeffrey Rubnitz MD, Raul C. Ribeiro MD. *St. Jude Children's Research Hospital, Memphis TN*

Background: *FLT3*-ITD mutation is an adverse prognostic feature in acute myeloid leukemia (AML). Therapy is intensified for *FLT3*-ITD-positive AML with an allelic ratio (AR) >0.4 or for minimal residual disease (MRD) ≥0.1% after remission induction (two courses of ADE). However, it is not established whether AR and MRD are interrelated risk factors.

Objective: The primary aim was to determine whether *FLT3*-ITD AR is an independent prognostic factor.

Patients and Methods: We compared data of 46 patients with *FLT3*-ITD-positive AML according to AR values. Patients were enrolled on the St. Jude Children's Research Hospital AML02 or AML08 protocols. The remission induction regimen was comprised of two cycles of cytarabine plus etoposide and daunomycin (ADE). Consolidation therapy consisted of chemotherapy with or without sorafenib and/or transplantation.

Results: Comparisons of patients with AR ≤0.4 (n=14) versus AR >0.4 (n=32) showed no significant difference in median age (12.5 years vs. 12.7 years, p=0.56), white blood cell count (65.3 $x10^9$/L vs. 143.6 $x10^9$/L, p=0.13), normal karyotype (85.7% vs. 93.7%, p=0.57) or MRD ≥0.1% after two courses of ADE (38.5% vs. 44.4%, p=1**)**. The 4-year event-free survival (EFS) estimates for cases with MRD ≥0.1% after two courses of ADE were 20.1% (95%CI, 7.5%-54.4%) compared with 54.1% (95%CI, 36.5%-80.1%) for cases with MRD <0.1%, (p=0.04). Conversely, the 4-year EFS estimates for cases AR >0.4 was not significantly different from those with AR ≤0.4 (43.2% vs. 59.9%; p=0.38). When data on AR is integrated with those of MRD after two courses of ADE, the 4-year EFS estimates for cases with both MRD <0.1% and AR ≤0.4 was not significantly different from those with both MRD <0.1% and AR >0.4 (60.0% vs. 51.3%, p=0.62).

Conclusions: *FLT3*-ITD AR >0.4 may not contribute prognostic information when patients have negative MRD after two courses of ADE chemotherapy. This observation must be confirmed in a larger cohort of patients with *FLT3*-ITD-positive AML.

"SUBCUTANEOUS FAT NECROSIS OF THE NEWBORN: A CASE STUDY AND REVIEW OF NEONATAL PANNICULITIS"

Dr. Virginia Miller, D.O., Additional Authors: Dr. Dianne Wilson, M.D., Dr. William O'Connor, M.D.
University of Kentucky, 800 Rose Street, Lexington KY, 45630

Subcutaneous fat necrosis of the newborn (SCFN) is a rare condition of infancy, associated with peri-natal birth events such as hypoxia or asphyxia, particularly when treated with hypothermic therapy. Recent studies have suggested that elevated birth weights (>90th %) and maternal gestational diabetes or preeclampsia may also represent independent risk factors for SCFN in hypoxic infants.
Characterized by indurated, red-purple plaques, SCFN occurs within the first four weeks of life (most within first 14 days), is noted over bony prominences (spine, elbows, cheeks, buttocks), and evolves quickly with spontaneous resolution. Although the lesions are self-limited, SCFN is associated with hypercalcemia with related sequelae of seizures, irritability, hypotonia, renal failure, and rarely cardiac arrest. Additional complications include fat liquefaction and cutaneous atrophy, thrombocytopenia, hypertriglyceridemia and hypoglycemia. A thorough history and physical is imperative for diagnosis as the differential is broad, and includes neonatal lupus, sclerema neonatorum, infection, malignancy and even abuse.

We present an 11 day old Caucasian female born at 41 weeks gestation with progressive lethargy, poor feeding, weight loss, and a new onset "rash". Physical exam revealed a lethargic, afebrile infant with several non-blanching "bruised areas" over the mid-upper back. Birth history included uncomplicated vaginal delivery to a mother with gestational diabetes. Non-accidental trauma was high among the differentials due to the lesional pattern, which was consistent with shaking or squeezing. Extensive work-up revealed borderline hypercalcemia (10.7) and elevated serum creatinine, but no evidence of infection or trauma. Dermatology consult also suggested panniculitis; a biopsy was performed and the patient was discharged, pending results.

Histologic evaluation showed fat necrosis with foreign body giant cells, granulomas, fibrosis, and characteristic needle shaped crystals within adipocytes.

While SCFN is a rare and generally non-life-threatening condition, knowledge of the entity, its differentials, and diagnostic approach is clinically relevant. Early recognition of SCFN may spare expensive work-up of unrelated etiologies, and allow earlier directed efforts toward monitoring serious serologic and clinical manifestations of the condition.

Maternal Behaviors Mediate Executive Function Risks associated with Preterm Birth

Janelle J. Montroy, Ph.D., Dana DeMaster, Ph.D., Andrea Freeman Duncan, M.D., Susan Landry
UT Health Science Center at Houston, 7000 Fannin St. Suite 2373H, Houston, TX, USA.

Background: Despite advances increasing survival, preterm infants remain at high risk for neurodevelopmental deficits, particularly in executive functioning (EF). EF refers to cognitive skills (attention, working memory, inhibition) that enable problem solving and goal setting[1.] EF is associated with academic and health outcomes[2]. Approximately 50% of preterm children exhibit EF deficits[3]. Yet little is known about potential environmental mechanism(s) through which preterm birth-risk affects EF. We investigated whether early maternal attention and regulation supporting behaviors mediated the relationship between birth-risk and later EF. Given that studies evaluating term infants suggest maternal behaviors contribute to later EF[4], we anticipated that how mothers respond to early challenges of supporting attention and regulation in preterm children would account for the association between birth-risk and EF.

Method: 233 preterm infants (51% male; gestation age ≤36 weeks) and their low socioeconomic families were included. 92 infants were diagnosed with severe medical complications. Maternal behaviors were assessed at 12-months corrected age. Observers documented verbal and non-verbal communication directed towards the infant. We coded frequency with which mothers maintained (e.g., mother verbalization related to the activity/object the infant was engaged with), redirected (e.g., Maternal verbalization switches infant's focus to a new toy/activity), or demonstrated directiveness (e.g., maternal strategies to provide more control/structure through less choice and/or increased information such as 'put the block here' or pointing to where a toy should go)[5].

We collected two EF measures at age 4-years. *Six boxes* assesses working memory and inhibition. Six boxes are baited with rewards. The child attempts to retrieve rewards using the fewest box searches. After each search, boxes are briefly hidden before the next search. Ratio scores were used to reflect boxes/searches. The *Independent Toy Play* assesses goal directed behavior. We gave children three toy-sets to play with (3 minutes each). We videotaped and coded the frequency of highest level of goal directed play[6].

Results: We used mediation with bootstrapped effects to evaluate whether maternal behaviors mediated links between birth-risk (defined by gestational age) and age 4 EF. Mediation models are considered causal. Bootstrapped effects provide unbiased estimates with 95% confidence intervals (CI^{95}) replacing p-values. Results are significant when the CI^{95} doesn't include zero.

We regressed an EF factor on birth-risk. This direct effect was significant, $\beta = 0.34$, $p < .05$. We added maternal maintaining, redirecting, and directiveness simultaneously as mediators. Maternal behaviors at 12 months mediated the relationship between birth-risk and EF, $\beta = 0.13$, $CI^{95} = [.07 – 0.68]$, (Figure 1). Infants born closer to term elicited more maternal behaviors which was associated with higher EF. The direct mediated effect became non-significant, $\beta = 0.21$, $CI^{95}=[-0.22 – 1.39]$. Maternal behaviors accounted for 38% of the birth-risk to EF association.

Conclusion: These findings indicate that early maternal behaviors can have a lasting effect on preterm infant's development. This suggests that child outcomes could potentially be improved by targeting maternal behaviors. Handouts with suggested maternal activities will be provided, and offer a starting point for how pediatricians can support early maternal behaviors.

References available upon request.

IMMUNE MEDIATORS AND VITAMIN D STATUS IN THE DEVELOPMENT OF COMORBIDITIES OF PREGNANCY

Rebecca Suzanne Moore, MD; Jennifer K. Mulligan, PhD; Howell Harmon; Bruce W. Hollis, PhD; Carol L. Wagner, MD
Department of Pediatrics, Division of Neonatology; Medical University of South Carolina, Charleston, SC

Background: The development of comorbidities of pregnancy (COP), including preterm labor/birth, preeclampsia and chorioamnionitis, leads to adverse neonatal outcomes. Changes in maternal immune system regulation from an anti inflammatory to pro inflammatory pathway may contribute to the development of COP. Vitamin D is a known immune modulator of both the innate and adaptive immune systems. Pregnant women have an increased risk of vitamin D insufficiency at delivery, with as many as 83% African American and 47% Caucasian US women having serum 25(OH)D levels <32ng/mL. A recent NICHD trial with vitamin D_3 supplementation during pregnancy revealed a decreased risk of COP in pregnant women with sufficient 25(OH)D levels ≥ 40 ng/mL.

Methods: Case-control study using data collected from a randomized, double-blind placebo controlled trial enrolling pregnant mothers placed into one of two treatment regimens of vitamin D_3. RCT participants attended monthly antenatal appointments with hematologic samples obtained at each visit. Present analysis reflects maternal serum 25(OH)D and immune regulatory product concentrations obtained each trimester, correlating with visits 1, 4 and 7. Maternal 25(OH)D concentrations were assayed. Plasma cytokines and other immune regulatory product concentrations were measured by ELISA. COP defined as preterm labor/birth <37 weeks gestation, preeclampsia or chorioamnionitis. Associations between maternal 25(OH)D and immune mediator concentrations and COP were estimated using Wilcoxon rank-sum tests. Associations between maternal immune mediator concentrations and 25(OH)D levels were examined using a Spearman correlation analysis.

Results: To date, of the >200 participants, 21 subjects developed preterm labor/birth, 10 preeclampsia and 3 chorioamnionitis, for a total of 28 patients with development of COP. Subjects with preterm labor/birth had decreased TGF-β concentrations throughout pregnancy, significant in the 1st and 2nd trimesters, increased TNF-α concentrations, significant in all trimesters, and decreased IL-6 concentrations in the 2nd and 3rd trimesters, compared to subjects without preterm labor/birth. No significant relationships were found between maternal immune mediator concentrations in the preeclampsia or chorioamnionitis groups when compared to controls. No significant associations were found between the development of COP and maternal 25(OH)D levels. In women who developed COP, no significant correlations found between immune mediator concentrations and 25(OH)D levels. No differences were found between groups of 25(OH)D sufficient (≥40 ng/mL) vs insufficient and the development of COP.

Conclusion: While preliminary results (n=40) of this larger study showed a significant correlation between maternal 25(OH)D levels and immune mediator concentrations, this may be independent of the development of COP. Low prevalence of development of COP in the study group may be obscuring our results, as we were not adequately powered to detect a relationship between 25(OH)D levels and immune mediators. Alterations in maternal immune mediators TGF-β, TNF-α and IL-6 were found in mothers who developed preterm labor/birth and this may be associated with this inflammatory process.

FEMINIZING PEDIATRIC ADRENOCORTICAL TUMOR WITH UNIQUE HISTOLOGICAL FEATURES PRESENTING WITH GYNECOMASTIA: A CASE REPORT AND LITERATURE REVIEW

Shannon Murphy Crook, MD; William O'Connor, MD, Department of Pathology, University of Kentucky, Lexington, Kentucky

Introduction: Gynecomastia in teenage males presents a broad differential. The majority are due to benign causes; however, rarely a gonadal or endocrine neoplasm is the basis. Adrenocortical tumors are rare in pediatric patients, with an incidence of less than 20 new cases per year in the United States[1]. Greater than 90% are hormonally functional, typically presenting with Cushing's syndrome, virilization, and rarely, feminization. Over two-thirds are malignant and may behave aggressively depending on tumor size and patient age. We present the case of a 15 year old male with a feminizing adrenocortical tumor with a heretofore unrecognized histopathology and summarize the current literature.

Case study: A previously healthy 15 year old male presented initially with progressive gynecomastia over a six month period that continued to increase in size in late 2015. Concurrently, he suffered from worsening acne of the face and upper trunk (treated with antibiotics and topical creams) and hypertension (blood pressures 140s/90s) treated with Lisinopril. Referral to endocrinology disclosed marked elevation of DHEA-S, estrone, and estradiol. MRI showed an 8 cm mass arising from the right adrenal gland concerning for adrenocortical carcinoma, with no radiologic evidence of metastasis.

Elective right adrenalectomy revealed a grossly soft, solid dark yellow-brown encapsulated mass replacing the majority of the adrenal gland. Microscopically, neoplastic eosinophilic (oncocytic) adrenal cortical cells grew in broad trabeculae, nests, and diffuse sheets. Tumor cells had multiple unique eosinophilic intracytoplasmic globular PAS and Luxol fast blue (LFB) 0positive inclusions. No significant cytologic atypia, necrosis, or mitotic activity was identified. Focal capsular invasion, but no venous invasion, was seen. Accepted criteria for malignancy of adrenal cortical neoplasms in pediatric patient were not met.

Discussion: Recognition of unique histologic variants will help mitigate potential misclassification of these rare tumors. Differential histopathology: A) Oncocytosis is recognized as a rare phenomenon in the non-neoplastic adrenal cortex and in benign and malignant tumors. A metaplastic change, oncocytosis is due to accumulation of mitochondria within the cell's cytoplasm. B) Unique solitary intracytoplasmic inclusions called spironolactone bodies are recognized in patients with aldosterone-secreting adrenal adenomas who have been treated with the aldosterone-antagonist spironolactone. These inclusions derive from smooth endoplasmic reticulum as demonstrated by electron microscopy, stain with Luxol fast blue due to membrane-bound phospholipids in the structure, and are PAS negative. C) Finally, similar to our patient, Mete et al. described an oncocytic adrenal cortical adenoma in a 72-year old female with multiple intracytoplasmic inclusions deriving from degenerating mitochondria in 2009. These inclusions were noted to be LFB negative and PAS positive.

To our knowledge, this is the first pediatric case and the first feminizing adrenocortical adenoma to be described demonstrating oncocytic features with intracytoplasmic eosinophilic inclusions that is not associated with spironolactone. This rare case expands the differential diagnosis of gynecomastia in the adolescent male.

ANTENATAL CORTICOSTEROIDS AND OUTCOMES IN PRETERM INFANTS BY GESTATIONAL AGE

CP Travers[1], RH Clark[2], AR Spitzer[2], A Das[3], TJ Garite[2,4], WA Carlo[1]
[1]Division of Neonatology, University of Alabama at Birmingham, Birmingham, AL, USA
[2]Center for Research, Education, and Quality, Pediatrix Medical Group and MEDNAX, Sunrise, FL, USA
[3]Social, Statistical and Environmental Sciences Unit, RTI International, Research Triangle Park,NC, USA
[4]Department of Obstetrics and Gynecology, University of California, Irvine, CA, USA

Aims
Analyses of data on antenatal corticosteroid exposure by gestational age indicate mixed results for many neonatal outcomes in part due to the small sample size of randomized controlled trials and observational studies. The aim of this study was to determine if exposure to antenatal corticosteroids is associated with reduced hospital mortality (primary outcome) and major morbidities at each gestational age in preterm infants.

Methods
Prospectively collected data on 117,941 infants 23 0/7 to 34 6/7 weeks' gestational age born between January 1, 2009 and December 31, 2013 in the 300 hospitals of the Pediatrix Medical Group were analysed. Death or major morbidities were analysed by gestational age and exposure to antenatal corticosteroids using models adjusted for birth weight, sex, mode of delivery, and multiple births.

Results
Infants exposed to antenatal corticosteroids had a significantly lower rate of death before discharge at each gestation less than 30 weeks compared to infants without exposure (range of adjusted odds ratios 0.44 to 0.55). The number needed to treat with antenatal corticosteroids to prevent one death before discharge increased from 6 at 23 and 24 weeks' gestation to 798 at 34 weeks' gestation. Infants exposed to antenatal corticosteroids had lower rates of severe intracranial hemorrhage or death, necrotising enterocolitis ≥ stage 2 or death, and severe retinopathy of prematurity or death compared to infants without exposure at all gestations less than 30 weeks. Benefits were less consistent for infants born ≥ 30 weeks' gestation.

Conclusion
Among infants born at each gestational week less than 30 weeks, antenatal exposure to corticosteroids compared to no exposure is associated with lower mortality and morbidity. The effect size of exposure to antenatal corticosteroids on mortality appears to be larger in infants born at the lowest gestations.

The First 1000 Days movement in Ireland

Michelle Gray, Danone

Aims: The First 1000 Days movement is a non-commercial initiative by *Danone Early Life Nutrition* in Ireland which aims to create awareness around the importance of nutrition from conception up until 2 years of age. Ultimately, the aim is to change behaviour towards nutrition during this formative period. Foetal development and infancy are characterised by rapid growth, development and maturation of organs and systems. Alteration in the availability of nutrients during this time can have permanent and powerful effects on body structure, function & metabolism[1, 2].
Methods: The First 1000 Days movement uses various methods to educate parents and parents-to-be on nutrition during the 4 key stages: pregnancy, breastfeeding, weaning & toddler. The First 1000 Days website, social media pages, TV advert, annual medical symposium and celebrity ambassadors play a crucial role in delivering the key messages to a wide audience. The First 1000 Days recipe book is free to order for parents and is being distributed by healthcare professionals across Ireland. Working in partnership with the *Irish Nutrition & Dietetic Institute (INDI)* and *the Irish Practice Nurses Association (IPNA) enhances the strength and reach of the nutrition messages being delivered.*
Results: Awareness of the term First 1000 Days amongst parents was 9% in June 2013 (pre-launch). In June 2016, 66% of parents report to be familiar with the term and 51% fully understand what it means. Of those parents who are aware of the term First 1000 Days, 52% reported that a healthcare professional discussed it with them, 35% of them heard about it online, and 33% heard about it from our TV advert.
Conclusion: The First 1000 Days movement has been effective in creating awareness amongst parents in Ireland of the importance of optimum nutrition from conception to 2 years of life. Establishing a First 1000 Days coalition of like-minded partners may prove beneficial in strengthening the reach of the movement. This is only the start of an initiative that has the potential to write the map of future generations' health in Ireland.

References:

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2. Langley-Evans S. C. (2015) 'Nutrition in early life and the programming of adult disease: a review', *J Hum Nutr Diet*, 28(1), pp. 1-14.

Speaker: Louise O'Sullivan

FirstLight is a voluntary organisation set up 1976 by bereaved parents to offer support to parents and families of children who have died as a result of Infant Death Syndrome (SIDS) (more commonly known as Cot death). The organisation was founded by a group of bereaved parents because there was no service to support them at the time. The organisation was originally known as the Irish Sudden Infant Death Association and changed the name of the charity in October 2014 to reflect the growing needs of its clients.

FirstLight offers professional support and information, and promotes research into the sudden, unexpected, often unexplained death of a child. FirstLight is here to support the parents and families who have lost a child, regardless of the circumstances. We provide professional and qualified care, compassion, and professional support to bereaved parents and families in their darkest hour.

Through the provision of training and awareness FirstLight wants ensure that the organisation:
• Keeps professionals up to date with best international practice when dealing with the sudden death of a child or young person thorough specialised training and awareness programmes
• Develops a trusting relationship with the professional and qualified front line staff for parents and families to be encouraged to contact or be referred to FirstLight for professional support
• Ensure that the mission of ensuring that every family that suffers the devastating sudden loss of a child or young person knows that the professional support services of FirstLight are there for them regardless of where they live in the country

FirstLight

24 hour hotline 087 2423 777

Office Number 018732711

www.firstlight.ie

support@firstlight.ie

The Caring Matters Now Support Group

Speaker: Bronagh Cleland

The Caring Matters Now support group was established in 1998. The support group has three main aims which are: To support those affected by Congenital Melanocytic Naevi (CMN) To raise awareness about CMN To raise funds for the CMN research

Today, the CMN support group is run by 11 regional support contacts who either have CMN or have children with CMN. Over 400 families are registered with the charity. The charity primarily covers those living in the UK but is also happy to provide support and information to families living internationally. In 2014 a regional support contact was appointed to support families living in Ireland.

In partnership with other support groups and with help from those that have grown up with CMN, Caring Matters Now provides information, advice and personal support. The charity hosts family days across the UK and Ireland to give those with CMN, their parents and siblings the opportunity to get together, meet others affected by the same condition, share stories and experiences. The family days also offer the chance to meet and talk to medical professionals. Attendees are updated on the charity's activities and the latest developments on the research programme.

Caring Matters Now is a significant funding source for the CMN research programme taking place at Great Ormond Street Hospital in London. Members are keen to fundraise to support this research.

The cause of CMN has recently been discovered. Treatment options are currently very limited. The future holds a lot of development for Caring Matters Now including an aim to increase collaboration with international CMN support groups to establish a worldwide network, share best practices and ultimately to find effective treatments for those with CMN.

Website www.caringmattersnow.co.uk
Email bronagh@caringmattersnow.co.uk
Telephone: 0861905853

LEARNING FROM THE LEARNERS – AN ASSESSMENT OF UNDERGRADUATE PAEDIATRIC STUDENTS PERCEPTION OF TEACHING METHODS

GH Butler[1], EL Larkin[1], K O'Connor[1], A Nicholson[1], P McNally[1]
[1]Paediatrics, OLCHC, RCSI, Dublin, Ireland

Aims:
There is an evolving focus on the importance of providing feedback to medical students during training[1,2]. This is crucial in identifying areas for improvement and motivating students. To optimise our provision of paediatric education and to establish preferred teaching methods, we sought to survey our students to determine perceptions of the course[3].

Methods:
We distributed anonymous surveys to 161 medical students after their six week paediatric rotation in a single tertiary teaching hospital. Questions focussed on problem based learning, small group tutorials, overall experience (with specific analysis of peer led teaching including case and topic presentations), peripheral hospital placements and use of the virtual learning environment (VLE). Options ranged from extremely satisfied to extremely dissatisfied for the first four topics and spaces were left for comments in other areas.

Results:
Overall the response rate was 95%. Of the peer led teaching sessions, topic based presentations were preferred over cases. 70% of students who responded described themselves as extremely satisfied or satisfied with relevance and usefulness of topic presentations in comparison to only 54% extremely satisfied/satisfied with case based presentations. 84% of students responded that they were extremely satisfied or satisfied with their overall learning experience in paediatrics. Recurring feedback included a desire for a greater number of small group tutorials, improved online lecture material and mock history scenarios. Despite the positive feedback for peer led topic teaching, there were many requests for topics to be presented by tutors rather than students.

Conclusion:
Overall, there was a high level of satisfaction among undergraduate students in their paediatric rotation. Peer led teaching is an effective way of delivering core curriculum material and gives students an opportunity to hone presentation skills. Consistent criticism has led to a full review and update of the VLE. We should not overlook the need to regularly review our students evaluation of our teaching.

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THE GENERAL PAEDIATRIC SURGICAL SERVICE AT UHL AND THE FUTURE

L E Darcy[1], M R Boland[1], Z Khan[1], A Lal[1], S Tormey[1], A J Lowery[1], B A Merrigan[1]
[1]Department Of General Surgery, University Hospital Limerick, Limerick

Aims

General surgeons with a special interest in paediatric surgery continue to provide essential surgical services to many patients in general hospitals around Ireland, with more complex surgeries being carried out in dedicated paediatric hospitals in Dublin. The provision of such services is at risk due to a lack of dedicated training and increasing demands on general surgeons. The aim of this study was to examine the level of the paediatric surgical workload at the University Hospital Limerick.

Methods

All general paediatric surgical activities between 1st January 2014 until 31st of October 2015 were examined. Data was obtained primarily from HIPE records. Demographic characteristics as well as operative details and length of stay for each patient was collated to assess work volume and patterns of paediatric surgical practice.

Results

Over the period examined the total number of surgical admissions which includes general surgery, ENT, urology, and orthopaedics was 20,771, 3750 of these were between the ages of 0-14 years. General surgery had 9,507 admissions with 1005 (10.6%) of these being paediatric surgical patients. Of these 1005 admissions 915 (91%) were emergency admissions and 90 (9%) were elective admissions. A total of 423 procedures were performed, the most common of which was appendicectomy (64%).

Conclusion

The problems associated with the loss of a general paediatric surgical service outside of Dublin are innumerable. Loss of these services will lead to large numbers of patients requiring transfer to Dublin, this puts the tertiary hospitals at risk of saturation which may compromise the provision of complex neonatal and paediatric surgery. Stringent policies outlining the provision of a general paediatric surgical service in secondary hospitals are required. With such a significant workload, alteration of the current training pathway for general surgeons to incorporate a mandatory period in paediatric surgery may be necessitated.

A MAPPING OF ENURESIS SERVICES IN IRELAND – A PICTURE OF INEQUITY, INEQUALITY AND DISCONNECT

E Robinson[1], C Mason-Mohan[2], N van der Speck[3], M Smyth[4], U Donoghue[5], H O'Brien[6], D Healy[4]
[1]Health Protection Surveillance Centre, Dublin, [2]Department of Public Health Medicine, Health Service Executive North West, Letterkenny, [3]Cavan General Hospital, Cavan, [4]Community Health Organisation 6, Health Service Executive, Wicklow, [5]Community Health Organisation 3, Health Service Executive, Clare, [6]Community Health Organisation 2, Health Service Executive, Mayo, Ireland

Aims
Nocturnal enuresis can be a stressful condition for both parents and children. Prevalence estimates suggest that 400 to 700 children per 100,000 population require professional support. As part of the Child Health Model Review, a subgroup was established to review enuresis services in Ireland. A mapping of current service provision was undertaken to inform the process.

Methods
Three online surveys were conducted. A survey of Directors of Public Health Nursing (DPHN) determined community services within local health offices (LHOs). A survey of paediatricians determined service provision within the hospital sector. A third survey of dedicated enuresis services, identified through the prior surveys, determined specialised service provision.

Results
Responses were received from DPHNs representing 23 LHOs, 34 paediatricians working in 15 different units, and 13 dedicated enuresis services.
LHOs differed in mechanisms to identify children with enuresis, management protocols, referral pathways, and PHN training. Specialised services are available in 57% of LHOs.
Of responding paediatricians 67% receive enuresis referrals, with children typically being seen in general clinics. Variation in training, professional development, and resources exist. Only 12% report access to alarms. Only four units reported formal links with community enuresis services.
Specialised services vary in staff, waiting-times, access criteria, training, access to medical support, and governance processes. The majority must refer onwards for management with medication.
Common themes emerging from comments across surveys included the need for a standardised approach to services nationally, additional training, and appropriate resources. There was strong support from both paediatricians and PHNs for nurse-led community enuresis services, with paediatric support when required.

Conclusions
There is inequity, inequality and disconnect in enuresis services across the country. The findings informed the work of the enuresis subgroup, which has now developed a pathway for enuresis management and a service specification for delivery of the pathway in order to promote a standardised, evidence-based approach nationally.

A PILOT STUDY: IMPLEMENTING A SENIOR HOUSE OFFICER (SHO) LED TEACHING PROGRAMME TO UNDERGRADUATES IN AN IRISH PAEDIATRIC SETTING

A Jenkinson[1], A Smith[1], K Gorman[2], S Doyle[2], S Murphy[2]
[1]Senior House Officer, Temple Street Children's University Hospital, Dublin, Ireland
[2]Department of Paediatrics, University College Dublin, Dublin, Ireland

Near-Peer Teaching (NPT) is a relatively new and expanding area of educational research, supported by the international medical education community at large. To date, no literature exists describing its implementation in paediatric settings.

Aim:
Our aim was to establish a structured Senior House Officer (SHO) led teaching programme in an Irish healthcare context and to examine the attitudes, experiences and learning outcomes of participating students.

Methods:
A group of 10 SHO's from Temple Street Children's University Hospital volunteered to participate in delivering teaching sessions to students (total 90) from University College Dublin (UCD). The programme consisted of three SHO delivered didactic lectures and a minimum of one bedside tutorial. UCD Lecturers selected the content delivered so that it reflected core learning objectives from the curriculum. Students completed a questionnaire before and after the programme assessing attitudes to paediatrics, NPT and SHOs as teachers. They also received a standardised examination of the topics covered.

Results:
Students expressed a more positive attitude towards a career in paediatrics after their rotation. Their perception of history, examination and communication skills was greatly increased. They deemed SHO's to have appropriate skill and knowledge levels to teach, as well as reporting a less threatening teaching environment. Results from the standardised examination were substantially improved post teaching.

Conclusion:
NPT has been established in multiple studies as a useful adjunt to standard medical education. Here we describe its first successful implementation in the paediatric setting. The pressure of increasing numbers of medical students without a similar increase in teaching resources has the potential to compromise education and training. This study shows SHOs are a valuable teaching resource. By promoting NPT programmes we can contribute to providing cost effective clinical training for both undergraduate medical colleges and the Higher Education Authority whilst also promoting teaching as an important role within the medical profession.

THE NEED FOR RATIONALISATION OF LABORATORY SERVICES FOR PAEDIATRIC ENDOCRINOLOGY IN IRELAND

N O Cathain[1], SM O'Connell[2], NP Murphy[3], PD Mayne[4], MJ O'Grady[1]
[1]Department of Paediatrics, Midland Regional Hospital, Mullingar, [2]Department of Paediatrics and Child Health, Cork University Hospital, Wilton, Cork, [3]Department of Paediatric Endocrinology, Children's University Hospital, Temple St., Dublin 1, [4]Department of Biochemistry, Children's University Hospital, Temple St. , Dublin 1, Ireland

Aims:
To delineate the organisation of laboratory services relevant to the practice of paediatric endocrinology in Ireland, with a view to rationalise how such services are provided.

Methods:
Hospital laboratories affiliated with 19 paediatric departments were surveyed. Information was sought regarding 55 different endocrine, biochemical, metabolic, genetic and immunological tests relevant to the practice of paediatric endocrinology. Variables examined included sample type, number of samples assessed, reference range and turnaround time. Data were also sought regarding costs, including those associated with sample transportation.

Results:
To date, 13/19 (68%) of hospital laboratories have provided adequate data for comparison and analysis. The costs of testing differed considerably, as did the external sites employed for sample testing. Sixty-nine percent of in-house testing provided results within 24 hours while external testing had widely varying turnaround times ranging between 4 and 84 days. To illustrate some of the variation encountered, three centres have an in-house insulin assay; the remaining 10 centres send samples externally to four different sources (Biomnis, St. James, Beaumont & Guildford (UK)). Larger centres were less likely to send samples externally than smaller centres. A large percentage of analytes were outsourced to the commercial laboratory Biomnis. Neither of the two largest children's hospitals utilised this service, however in the remaining hospitals, the median percentage of externally directed endocrine tests for which Biomnis was the service provider was 45% (range 31-77%).

Conclusion:
Based on our data, a co-ordinated approach to paediatric endocrinology testing is required and planned implementation of a national IT platform MedLIS will facilitate his process. This will enable ongoing audit and potentially yield benefits in terms of cost savings and more rapid diagnosis from decreased turnaround times.

INTRODUCTION OF HYPOCHROMIC HAEMOGLOBIN EQUIVALENT (HYPO-HE) AND RETICULOCYTE HAEMOGLOBIN EQUIVALENT (RET-HE) TESTING WITHIN THE HAEMATOLOGY LABORATORY AND HAEMODIALYSIS WARD, TEMPLE STREET CHILDRENS UNIVERSITY HOSPITAL (TSCUH)

M Redden[1], J Flynn[2]
[1]Haematology Laboratory, Temple Street CUH, Dublin, Ireland
[2]Haemodialysis Ward, SMC, Temple Street CUH, Dublin, Ireland

Haemodialysis patients currently have work-up bloods performed once monthly to assess their circulating Ferritin levels to aide in EPO/Iron Sucrose medication determination. Reticulocyte Haemoglobin Equivalent (Ret-He) parameter on the Sysmex XN2000 Haematology Analyser gives a direct measure of haemoglobin content within reticulocytes released from the bone marrow in the previous 1-2 days. This parameter allows clinicians a real time assessment of iron availability for erythropoiesis.
We will decrease the turn-around time of hypochromic red blood cell testing from a mean of 9 days in MMUH (HYPO%) to 1.5 hours in TSCUH (Hypo-He) by 30th April 2016 in haemodialysis patients. The introduction of Ret-He will occur in parallel to the Hypo-He project by analysing Reticulocyte Haemoglobin Content (CHr) in MMUH with Ret-He in TSCUH.

Reticulocyte analysis on the Sysmex XN2000 Haematology Analyser in TSCUH was used to assess Hypo-He and Ret-He. Full blood count and reticulocyte analysis on the Siemens Advia Haematology analyser in MMUH was used to assess HYPO% and CHr. A Bland-Altman plot was used to statistically assess 75 patient samples for HYPO% Vs Hypo-He parameters. A regression plot was used to statistically assess 73 patient samples for CHr and Ret-He parameters. A Live Patient Study was carried out on 6 Haemodialysis patients to assess the live validity of the Hypo-He and Ret-He parameters if used in real-time.

The results of the data analysis show a strong correlation coefficient between the HYPO% Vs Hypo-He results of 0.76; and CHr and Ret-He results of 0.89 generated by the Sysmex XN2000 and the Siemens Advia Haematology Analysers. The Live Patient Study showed both Hypo-He and %HYPO; and Ret-He and CHr results were within or above the reference ranges respectively, or within a range which the nephrologists would not clinically act on the results. This supports the strong correlation coefficients obtained above.

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EXPLORING PSYCHOSOCIAL MENTORING IN PAEDIATRIC POSTGRADUATE MEDICAL EDUCATION: A GENDER-FOCUSED STUDY

S McGlacken-Byrne[1], W Cullen[1]
[1]Medical Education Department, National University of Ireland, Galway, Galway, Ireland

Background

Psychosocial mentoring effectively addresses the personal and professional development of trainees. The influence of protégé gender and gender composition of the mentoring relationship remains uncertain. We aimed to illuminate the lived experiences of both male and female trainees and important differences between them.

Methods

We conducted a mixed-methods study of explanatory sequential design to explore psychosocial mentoring experiences amongst paediatric postgraduate trainees. We measured trainees' experiences using the Ragins and McFarlin Mentor Role Instrument (1). Purposefully sampled trainees were interviewed in a subsequent descriptive phenomenological phase.

Results

Of 81 respondents (46% RR, 24.7% male (n=20), 75.3% female (n=61)), 92.6% (n=75) had a mentor. The RMMRI had strong internal consistency (Cronbach alpha 0.94). Mean psychosocial mentoring score was 72.5 (range 31-124, SD 19.8); mean career development mentoring score was 69.7 (range 26-112, SD 19.2). There was a trend toward females reporting lower scores than males ($t(73) = 1.465$, $p = 0.147$, $d = 0.41$). Trainees in gender-congruent mentoring relationships reported more psychosocial mentoring than trainees in gender-discordant relationships ($t(61.414) = 2.151$, $p = 0.035$, $d = 0.50$). Psychosocial mentoring scores correlated with career development mentoring scores ($r(73) = 0.727$, $p = <0.005$). 8 interviews explored these results. Personalized connections, interpersonal comfort, and critical personal events in trainees' lives heralded the transition from formal to informal relationships and the development of psychosocial mentoring. Psychosocial mentors praised and protected their trainees, problem-solved, "saw the bigger picture", and celebrated personal achievements. Psychosocial mentoring alleviated trainee fear and guilt, and created a sense of comradery, reassurance, and self-efficacy. Female trainees spoke of how these experiences addressed personal-professional life conflict.

Conclusion

Paediatric trainees report varying degrees of psychosocial mentoring, with those in gender-congruent mentoring relationships experiencing more. Invariant structures behind the meaning of psychosocial mentoring for trainees common across both genders were revealed. However, some gender-specific benefits were illuminated.

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APPRECIATING CLINICAL EXCELLENCE (ACE) – A QUALITY IMPROVEMENT PROJECT UTILISING POSITIVE INCIDENT REPORTING TO IMPROVE PATIENT CARE AND STAFF RESILIENCE

T Waterfield[1,] [1]PICU, RBHSC, Belfast, UK

Aims: Adverse event reporting is a well-established system for identifying risks to patient care. Adverse event reporting focuses on risk avoidance and does nothing to promote excellence or the development of praxis. There is growing evidence that an entirely negative approach to incident reporting results in the "second-victim phenomenon" with deleterious effects of staff morale and mental health[1]. We set out to design a method of positive incident reporting based on "learning from excellence theory"[1]. The aims of this project were to introduce a method of positive incident reporting to:

1) Identify learning from excellence
2) Improve staff morale
3) Promote praxis over competency

Methods: ACE reporting was encouraged for any excellent care. Individuals nominated for an ACE were notified and given a certificate for their portfolio. Following a 3-month trial period the ACE reporting was reviewed and lessons for improving patient care were identified and disseminated to staff. Staff feedback was collated on the acceptability of the project as well as the impact of the project on clinical care and morale.

Results: ACE forms were well received by staff members with nominees reporting a boost in morale and a perceived positive influence on future care. The 50 ACE nominations were qualitatively analyzed using grounded theory principles and 5 emergent themes of outstanding care were identified:

1) Patient Centered Care: Holistic care, Advocacy, Emotional support
2) Leadership: Leading on the wards, Quality improvement, Service development
3) Clinical skills: Technical, Consistency
4) Team working: Flexibility, Availability, Reliability
5) Mentoring: Enthusiasm, Openness, Accessibility

Conclusions:

ACE was well received by staff members and has had a positive impact on morale and clinical practice. Through ACE we have been able to define and recognize outstanding care. ACE is a low cost quality improvement project that has the power to positively influence patient care and staff morale. We are currently expanding the number of departments and healthcare trusts using ACE.

1) Learning from excellence in healthcare: a new approach to incident reporting. Kelly N, Blake S, Plunkett A. Arch Dis Child. 2016 May 4.

TRENDS IN SERIOUS ROAD TRAFFIC ACCIDENT INJURIES IN CHILDREN IN IRELAND

E Robinson[1], H Johnson[1]
[1]Health Intelligence Unit, Health and Wellbeing Directorate, Health Service Executive, Dublin, Ireland

Aims
Injuries sustained in road traffic accidents (RTAs) are a significant cause of morbidity in children and children are considered to be vulnerable road users. A common definition of a serious RTA-injury – a Maximum Abbreviated Injury Scale score of 3 or greater (MAIS3+) has recently been agreed in Europe. We examined trends in children hospitalised with RTA-injuries meeting this new definition.

Methods:
Records of emergency admissions in children under 15 years with an injury diagnostic code and a diagnostic code indicating that the injury was sustained in a RTA were extracted from the national hospital discharge database for the years 2005 to 2014. Injury severity was categorised as MAIS<3 or MAIS3+. Trends in all RTA-injury discharges and by MAIS categorisation were analysed overall, by road-user type, and by 5-year agegroup.

Results
MAIS3+ injuries accounted for 7.9% (330) of RTA-injury discharges among children over the study period. Pedestrians accounted for the majority of MAIS3+ discharges (46%), followed by car-occupants (24%) and pedal-cyclists (18%). This pattern was reflected in each agegroup, although the proportion of pedal-cyclists increased in older children. Males accounted for 63% of MAIS3+ discharges overall, and this male dominance was evident within each agegroup. All RTA-injury discharges decreased by 41% during the study period, MAIS<3 discharges decreased by 48%, and MAIS3+ discharges decreased by 32%. Decreases were seen in all road-user types. MAIS3+ discharges decreased by 55% in 10-14 year-olds, and by 13% in children under 5 years. MAIS3+ discharges among girls decreased by 42%, while the decrease in boys was 27%.

Conclusion
This is the first national analysis of trends in RTA-injury hospitalisations in children using the MAIS3+ definition. While there have been decreases in hospitalisations with RTA-injuries and in MAIS3+ injuries, the decreases are not uniform across age-groups and gender suggesting the need for gender and age-specific interventions.

SEVERE HEAD INJURY UNDER 18 YEAR OLDS: CAUSES AND OUTCOMES OVER A 2 YEAR PERIOD-A TARN BASED STUDY

A Fox[1] , J Doyle[2] , A Duffy[1] , D O'Toole[1] , P Houlihan[1] , J Caird[2] , A Nicholson[2]
[1]Beaumont Hospital, Beaumont , Dublin, Ireland
[2]Childrens University Hospital, Temple Street, Dublin

Aims: We reviewed severe head injuries in children and adolescents who were treated in two national neurosurgical centres in 2013 and 2014. We studied the epidemiology, severity, care processes and clinical outcomes of these injuries.

Methods: The TARN (Trauma Audit and Research Network) database was used to collect data for admissions of 72 hours or greater from two national neurosurgical centres. Results: 117 patients with a severe head injury were admitted consisting of 83 males and 34 females (2.4:1). 64 (54%) of all head injuries were as a result of a fall, of which 45 (38%) were from less than 2 metres. Falls from less than 2 metres accounted for 27 (71%) injuries to children less than 2 years of age. Of 26 head injuries under 12 months of age, 5 (19%) were felt to be non-accidental injuries. The degree of head injury was scored using ISS (Injury Severity Score) and GCS (Glasgow Coma Scale). 85 (73 %) had an ISS over 15, 19 (16%) between 9-15 and 13 (11%) between 1-8. 16 patients had a GCS under 8. The overall mortality was 5%. Morbidity was significant in that 21 survivors (18.9%) required intubation and 40 (34.1%) required one or more neurosurgical procedures. 21 (19%) patients had neuro-disability post-discharge all of which had an ISS > 15.

Conclusion: In our cohort, falls were the most common cause of severe head injury. The mortality in our cohort was 5% reflecting the experience in tertiary neurosurgical centres. The large burden of care that these injuries place on the hospital system is evident by the high number of neurosurgical interventions. It is evident that ISS is a good prognostic indicator as all those with neuro-disability scored greater than 15. In infants, non-accidental injury should always be considered.

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AN AUDIT OBSERVING THE USE OF SKULL RADIOGRAPHS IN HEAD INJURIES IN A TERTIARY EMERGENCY DEPARTMENT

AS GRIFFITHS[1], C HOPPER[1], N KANDAMANY[1]
[1]Emergency Department, Temple Street Children's University Hospital, Dublin

Aim

Temple Street Emergency Department (ED) annually manages around 60,000 patients. Head injuries account for approximately 7%. Recent diagnostic difficulties prompted this audit. Management is guided by PECARN (Paediatric emergency care applied research network),CHALICE(Children's head injury algorithm for prediction of important clinical events)and NICE. All recommend CT as modality of choice. NICE acknowledge roles of skull x-rays in occasionally identifying suspected NAI(not in diagnosing brain injury).

Methods

We used 'PACS' and 'Symphony to identify skull x-rays performed during 1/3/16-30/6/16 and to collate information regarding presentation, age, indication, ED and Radiological opinion and subsequent imaging.
Inclusion criteria:Concern for skull fracture following trauma. Seen first in ED.
Exclusion criteria:Requests from non-ED consultants/GP's.

Results

Total ED attendances reached 19,957 during 122 days-61 skull radiographs performed and 8 fractures identified. All fractures diagnosed by ED, were first identified on radiographs. All were described as having 'boggy' swellings. Following NICE guidelines, 6 fit criteria for CT. Following CHALICE and PECARN, all met criteria for CT(Note-retrospective ED notes review and not representative of events following leaving the ED). We are reluctant to quantify how many of the 61 met the criteria for CT due to the open interpretation of the term 'boggy swelling'.
Average age of patients with skull fractures was 15months. Of the 8 fractures, 4 received CT scanning-three due to abnormal neurology. One fracture was not identified though was promptly reported. On two occasions, ED clinicians incorrectly identified a fracture which Radiologists then reported normal.

Conclusion

Temple Street ED is successful in managing an incredibly high number of head injuries of varying severity. The use of X-ray is a little superfluous. Practice amongst NCHD's could err more towards pragmatism. Our interpretation of skull x-rays, however is good. Following this, we aim to emphasise the importance of a good quality, thorough examination and divert practice toward international guidelines.

'WHEEZERS' IN A REGIONAL PAEDIATRIC ED – WHO GETS WHAT AND WHY?

A Cassidy, S Gormally, [1]Paediatrics, Our Lady of Lourdes Hospital, Drogheda, Ireland

Aims

1. Record demographics, clinical features, investigations, management and outcome of children in a Paediatric ED presenting with "wheeze" over a four week period.
2. Examine the correlation between history & clinical findings, and subsequent investigations.

Method: This study was undertaken over four weeks in a Regional ED. Charts from every presentation to ED were assessed daily. Those whose presenting complaint to ED reception was "wheeze", "shortness of breath" or "asthma" were included.

Results: Of 118 charts, two thirds were male. The age range was 29 days to 15 years, over 50% less than 1 year. One third presented between 8pm to 8am.

On presentation, 8% were febrile, 18% had oxygen saturations of <94%, one third had increased work of breathing, 36% had crepitations.

Twenty-six percent had a chest x-ray, with 50% positive findings. Twelve percent had phlebotomy, with 33% abnormal. Twenty-nine percent commenced antibiotics.

Of those with decreased air entry, 83% required oxygen and/or nebulization. Ninety-one percent of those with unilateral auscultation findings and 83% of those with decreased air entry had a chest x-ray. Twenty-five percent of children who presented febrile and 10% who had crepitations had phlebotomy. Eighty-six percent of children with positive chest x-ray findings, and 79% with raised CRP and/or WCC commenced oral antibiotics

Top diagnoses were bronchiolitis (33%), "wheezy episode" (19%), LRTI (15%), acute asthma (8%). In children diagnosed with LRTI, 50% had crepitations, 11% had fever, 11% had decreased O2 saturations. Of those diagnosed with LRTI, 39% had none of these features. Of those diagnosed with a wheezy episode or acute asthma, 61% had had previous episodes.

Conclusion: Analysis of the data showed various clinical features were predictors of who would receive O2 therapy, nebulization and/or antibiotics. The study found no features to identify children likely to have positive radiology or haematology findings.

1 "Chest radiographs in the pediatric emergency department for children < or = 18 months of age with wheezing." Mahabee-Gittens EM, Bachman DT, Shapiro ED, Dowd MD. Clin Pediatr (Phila). 1999 Jul;38(7):395-9. 2 "Can we distinguish pneumonia from wheezy diseases in tachypnoeic children under low-resource conditions? A prospective observational study in four Indian hospitals." Gowraiah V, Awasthi S, Kapoor R, Sahana D, Venkatesh P, Gangadhar B, Awasthi A, Verma A, Pai N, Seear M. Arch Dis Child. 2014 Oct;99(10):899-906. doi: 10.1136/archdischild-2013-305740. Epub 2014 Jun 12. 3 "Characteristics of radiographically diagnosed pneumonia in under-5 children in Salvador, Brazil" N. K. Key, C. A. Araújo-Neto, M. -R. A. Cardoso, C. M. Nascimento-Carvalho Indian Pediatrics November 2011, Volume 48, Issue 11, pp 873-877 4 "Clinical Predictors of Pneumonia Among Children With Wheezing" Bonnie Mathews, Sonal Shah, Robert H. Cleveland, Edward Y. Lee, Richard G. Bachur, Mark I. Neuman Pediatrics July 2009, VOLUME 124 / ISSUE 1 5 "Can we distinguish pneumonia from wheezy diseases in tachypnoeic children under low-resource conditions? A prospective observational study in four Indian hospitals." Gowraiah V, Awasthi S, Kapoor R, Sahana D, Venkatesh P, Gangadhar B, Awasthi A, Verma A, Pai N, Seear M. Arch Dis Child. 2014 Oct;99(10):899-906. doi: 10.1136/archdischild-2013-305740. Epub 2014 Jun 12.

CHARACTERISTICS OF PATIENTS PRESENTING TO A PAEDIATRIC EMERGENCY DEPARTMENT BY AMBULANCE

F Caulfield* N Kandamany I Okafor R McNamara

[1]Emergency Department, Temple Street Children's Hospital, Dublin, Ireland

Aims:

A recent capacity review from the national ambulance service reported an increase in the number of patients presenting to hospital by ambulance in the past three years (1). This is a review of patients presenting to a tertiary paediatric ED by ambulance to determine their characteristics and outcomes.

Method:

A retrospective study using an online database to collect information on patients presenting to the emergency department between 1st January and 31st March 2016. Outcome data was collected for the three month period and further patient characteristics were collected from scanned notes for patients presenting in March 2016.

Results:

882 patients presented to the ED by ambulance in this period. 147 patients required admission, 716 patients were discharged home of whom 85 had follow up arranged in an outpatient clinic, 18 patients did not wait to be seen by a doctor and 1 patient was pronounced dead on arrival. Of the 147 patients requiring admission 5 patients were admitted to ICU, 4 were transferred to another hospital for admission and 3 were discharged home for elective admission the following morning.
309 patients presented to the ED in March 2016 by ambulance. These were triaged as follows: 12 Category 1 (Immediate review), 101 Category 2 (review within 10 minutes), 110 were Category 3 (review within 1 hour), 84 were Category 4 (review within 2 hours), 1 was Category 5 and 1 did not wait to be triaged.

Conclusion:

Almost one third of patients presenting to the ED by ambulance were triaged as non urgent while 2% did not wait to be seen. Further investigation in the form of a parental perception questionnaire to determine attitudes towards ambulance use may help direct public education programmes and help reduce demand on the ambulance service.

1. Lightfoot Solutions UK Ltd, (2016). National Ambulance Service of Ireland emergency service baseline and capacity review. [online] Available at: http://www.hse.ie/eng/services/publications/NAScapacityreview.pdf [Accessed 21 Jul. 2016].

ARE WE MISSING NON ACCIDENTAL INJURY IN CHILDREN ADMITTED WITH FRACTURES?

AMH Ann-Marie Hayes, JN Jacques Noel, SH Sinead Harty
[1]BST SHO, Our Lady's Children's Hospital Crumlin, Dublin 8, Dublin
[2]Orthopaedics, Our Lady's Children's Hospital Crumlin, Dublin 8, Dublin
[3]General Paediatrics & Child Protection, Our Lady's Children's Hospital Crumlin, Dublin 8, Dublin

Aim:

Fractures are the second most common injury caused by child physical abuse, bruises being most common.[1] 80% of fractures due to abuse occur in children less than 18 months of age and up to 32% of fractures in children younger than 18 months are due to abuse. [2],3
The aim of this study was to review the management of children admitted with fractures in this high-risk group.

Method:

A retrospective review of all children less than 2 years, admitted with a fracture to Our Lady's Children's Hospital Crumlin over a one-year period, (Jan - Dec 2015) was performed. Children were identified using HIPE coding system; data was analysed using Excel.

Results:

Thirty seven children less than 2y were admitted with a fracture over the 12 month period, (n=37). The mechanism of injury (MOI) was documented in 100%. In 8(22%) time from injury to presentation not documented. Social history was documented in only 14(38%) of cases. Opinion if MOI consistent with injury sustained not documented in 28(75%).
14(38%) were referred to medical social work, 16(43%) referred for medical review, 12(32%) of cases had skeletal surveys performed, 6(16%) referred to Ophthalmology.
Three cases (8%) referred to TUSLA.

Conclusion:

Results demonstrate poor documentation and a lack of standardised approach to assessment of fractures in this group. This may lead to failure to recognise cases of non-accidental injury.

[1] Evaluating Children With Fractures for Child Physical AbuseEmalee G. Flaherty, MD, Jeannette M. Perez-Rossello, MD, Michael A. Levine, MD, William L. Hennrikus, MD, and the AMERICAN ACADEMY OF PEDIATRICS [2]Patterns of fractures in accidental and non-accidental injury in children: a comparative study PETER WORLOCK, MICHAEL STOWER, PETER BARBOR [3] Coffey, K. Haley, J. Hayes, J.I. Groner, The risk of child abuse in infants and toddlers with lower extremity injuries, J Pediatr Surg, 40 (2005), pp. 120–123

PILOT STUDY OF A PAEDIATRIC AMBULANCE CARE DIRECTIVE

I O'Brien[1], L Murphy[2], D Lonergan[3], M Seaman[3], A Byrne[3], A Finan[4]
[1]Paediatrics, Our Lady of Lourdes Hospital, Drogheda, [2]Paediatrics, University Hospital, Waterford, [3]Chief Ambulance Officer, National Ambulance Service, Dublin, [4]Education and Competency Assurance, National Ambulance Service, Dublin, [5]Education and Competency Assurance, National Ambulance Service, Dublin, [6]Paediatrics, Cavan General Hospital, Cavan, Ireland

Aims: The absence of nationally agreed care directives and communication processes has led, on occasions, to inappropriate resuscitative measures being provided by paramedics to children with Life Limiting Conditions (LLC) at end-of-life. Differences between hospital and ambulance service governance structures prevent the transfer of advance care decisions from the hospital to pre-hospital environment. The aim of this project was to design and evaluate the effectiveness of a new Hospital - Ambulance communication pathway and Ambulance Care Directive (ACD).

Methods: The pilot project received approval from the relevant governance groups to proceed in two geographical regions and data was collected from May 2015 to February 2016. A total of 31 ACD's were completed for children with LLC for whom it had been agreed that cardiopulmonary resuscitation would not be in their best interest. Notification of the child's ACD and address details were placed on the national ambulance computer dispatch system and copies of the ACD were held in the home and alternate places of care. An evaluation questionnaire was completed by both parents and ambulance crew to assess the effectiveness of the ACD and communication pathway.

Results: 16 ambulance calls were activated, 2 were for end-of life cases and 14 were acute hospital transfers. 14 out of 16 crews received advance notification of the ACD and all care provision adhered to the child's agreed treatment plan. High levels of satisfaction were reported by parents and ambulance personnel particularly in relation to clarity of care direction and improved communication.

Conclusion: The pilot demonstrated the system to be reliable and dependable. Positive outcomes for children at end of life were evident. Limitations of these findings relate to the two geographical regions selected and duration of the pilot study. Nonetheless, the results would support a proposal for the adoption of this system nationally.

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ATRESIA HYMENALIS WITH HAEMATOMETROCOLPOS: A CASE SERIES

L Whitla[1], MJ Barrett[1], SM O'Donnell[1], S Walsh[1], C Blackburn[1]
[1]Department of Emergency Medicine, Our Lady's Children's Hospital Crumlin, Dublin, Ireland

Aims:
Imperforate hymen or atresia hymenalis is rare, seen in as few as 1 in 10,000 girls. Many cases are diagnosed in the evaluation of primary amenorrhea or recurrent abdominal pain in the emergency department (ED). We present 3 cases of atresia hymenalis with resultant haematometrocolpos which were diagnosed in our paediatric ED over a two month period. The aim of our study was to highlight the need to consider haematocolpos in the differential diagnosis in the appropriate patient cohort.

Methods:
A retrospective chart review was undertaken and review of the literature.

Results:
Case 1: A 12 year old girl presented with a 2 month history of lower abdominal pain and recent vomiting. This was on a background of recent diagnoses of mesenteric adenitis and constipation. On examination there was a palpable suprapubic mass.
Case 2: An 11 year old girl presented with a 3 week history of abdominal pain, increasing over the preceding week, and associated dysuria. This occurred on a background of multiple recent diagnoses of urinary tract infections from multiple health providers. On examination there was a tender suprapubic mass, and bulging imperforate hymen.
Case 3: A 12 year old girl attended with abdominal pain and a 24 hour history of urinary retention after a transatlantic flight. The history revealed a 5 month history of cyclical crampy abdominal pain for which she had attended a hospital in the United States. On examination there was a supraumbilical palpable bladder, and 2.25L of urine was drained via urinary catheter. Re-assessment revealed a suprapubic mass.
In all 3 cases trans-abdominal ultrasound confirmed haematometrocolpos. All cases successfully underwent a corrective hymenotomy.

Conclusion:
Atresia hymenalis with haematometrocolpos must always be considered when evaluating premenarchal girls with secondary sexual characteristics presenting with lower abdominal pain or a mass.

READY, SET, GO! - AN AUDIT OF THE FIRST EIGHTEEN MONTHS OF THE IRISH PAEDIATRIC ACUTE TRANSPORT SERVICE

S Durnin[1, 2], J Hashmi[1, 2], L Heery[2], T Howlett[1, 2]
[1]Irish Paediatric Acute transport Service, National Transport Medicine Programme, Dublin, Ireland
[2]. Department of Anaesthesia, Critical care and Pain management, Temple Street Children University Hospital, Dublin, Ireland

Introduction: The Irish Paediatric Acute Transport Service (IPATS) is a dedicated paediatric intensive care retrieval service for critically ill children since its inauguration in October 2014. Guidelines for the acute retrieval recommend a team mobilisation time within 1 hour and team arrival time at the referring hospital within 3 hours.[1]

Aim: To outline the service provided to date and to compare the IPATS times with the Paediatric Intensive Care Audit Network (PICANet) guidelines. PICANet collects data on all children admitted to paediatric intensive care units in the UK and Ireland.

Method: A retrospective chart review of all IPATS transfers completed from October 2014 until April 2016.

Result: During this period, 130 transfers were completed. Predominant conditions were medical 63%, cardiac 12%, neurosurgical 13%, surgical 5%, palliative 2% and repatriation 3%. Median patient weight was 10kg, (range 2.1-80kg). Therapies used included inotropes 24%, non-invasive ventilation 6% and 70% of transfers were intubated and ventilated. The IPATS team was mobilised from base within 1 hour in 36.7% of transfers, with a median time of 1 hour 10 minutes (range: 15 minutes to 3 hours 39 minutes). The IPATS team arrived at the referring unit within 3 hours of accepting the transfer in 58.5% of transfers with a median time of 2 hours 55 minutes (range: 15 minutes to 5 hours 35 minutes). The mean time for the ambulance to arrive at the mobilisation base was 32.7 minutes, with 15 instances taking over one hour.

Conclusion: This audit details the service provided to date and highlights that there is significant room for improvement on mobilisation time and the time to arrival for the IPATS team. Various factors are involved leading to a delay in team mobilisation and arrival time including effective communication between referring unit and receiving unit, logistical issues and the bi-site location of the IPATS teams.

1. PICANet 2015 Annual Report Summary, Nov 2015, available online: http://www.picanet.org.uk/Audit/Annual-Reporting/PICANet_2015_Annual_Report_Summary.pdf

JOINT PAEDIATRIC AND EMERGENCY DEPARTMENT IN SITU RESUSCITATION DRILLS, A DUAL EDUCATIONAL AND QUALITY IMPROVEMENT INITIATIVE

S Shah[1], M Smith[1], MJ McGowan[1], S Kapur[1], T Oman[1]
[1]Children and Young People, Craigavon Hopsital, Southern Health and Social Care Trust, Portadown, UK

Aims

To **foster working relations** between Emergency Department and Paediatrics
To **identify latent safety threats** during resuscitation in a controlled environment
To **consolidate knowledge and skills** around common paediatric emergencies and **disseminate learning from some serious adverse incidents**
To **offer leadership roles** to senior paediatric trainees leading each session

Methods

We undertook 8 resuscitation drills in the emergency department over 1 year. Each session was followed by debrief, identification of key learning and suggestions for system change where latent safety threats were identified. Formal feedback was obtained and suggestions for improvement considered for next drill.

Result

8 drills were undertaken over a 1 year period. Scenarios included sepsis, meningitis, anaphylaxis, diabetic ketoacidosis, critical congenital heart disease, symptomatic hyponatremia, Sudden Unexpected Death in Infancy and acute severe asthma.

1. **Latent safety threats identified**
   Equipment & Drugs: age appropriate blood pressure cuffs and 2.7% saline made readily accessible
   Communication: All relevant phone numbers for the tertiary Centre eg PICU, NICU and wards laminated near the phone
   Technology: IPAD & local intranet updated to current DKA guideline
2. **Key lessons learnt**
   Learning reinforced: increased awareness of new DKA guideline, highlighted misdiagnosis of DKA in the setting of moderate hyperglycemia, acidosis and mild ketosis (think sepsis, bowel necrosis), reminder of bi-phasic response and empty ventricle syndrome in anaphylaxis, escalation to senior after second bolus in sepsis and no role of inhaled ipratropium beyond the first few hours in acute asthma due to receptor saturation
   Leadership:resuscitation team leader should ideally oversee resuscitation and remain hands off.

Conclusions

(i) Resuscitation drills have successfully identified latent safety threats, consolidated knowledge and skills around common paediatric emergencies
(ii) Some cases, based on lessons from serious adverse incidents have great significance for subsequent care
(iii) Interdisciplinary simulation based training continues to foster good working relationship between departments.
(iv) Sessions provide excellent leadership training opportunities

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DIAGNOSTIC ACCURACY IN CHIDLREN REFERRED WITH UNDESCENDED TESTES

Dr Donigiewicz[1], Prof Quinn[1]
[1]Department of Paediatric Surgery and Urology, Our Lady's Chidlren's Hospital, Crumlin, Dublin, Ireland

Undescended testes (UDTs) are a common and important healthcare issue present in >2% of 1-year-old boys. Recent international guidelines recommend surgical treatment completion by 18 months of life. In this prospective study, we report referral patterns and accuracy of diagnoses in 156 boys referred with this condition to a paediatric urology clinic over 12-month period. Mean age at presentation was 4.3 years. 54 (34.6%) were hospital-based referrals; 13 (8.3%) from general surgeons and 32 (20.5%) from paediatricians. Of the 102 (65.4%) referred from the community: 39 (25%) by GPs, 5 (3.2%) from Area Medical Officers, 32 (20.5%) by Public Health Nurses and 26 (16.6%) were initiated by a family member.

77 boys (49.4%) were discharged as having a normal examination at the first outpatient visit. 31 (57%) of those referred by consultant surgeons or paediatricians were booked for surgery. Of the community-based (78) patients, only 26 (33%) were booked for surgery.

38 patients (24%) were referred with an ultrasound (US) on assessment. The US did not influence the decision in any case and was inaccurate in 42% of cases.

Children in Ireland are still presenting to hospital at times markedly outside accepted international guidelines. Overall there was a diagnostic inaccuracy in 49% of children; 43% in consultant referrals and 67% in patients referred by community-based healthcare professionals. Education and training for all healthcare professionals involved in children’s care needs to improve, in particular for guidelines in UDT management and examination techniques.

AN AUDIT OF THE AETIOLOGICAL MEDICAL ASSESSMENT OF INFANTS WITH PERMANENT CHILDHOOD HEARING IMPAIRMENT (P.C.H.I.) IDENTIFIED THROUGH UNIVERSAL NEONATAL HEARING SCREENING (U.N.H.S.)

M Katre, E Corry, P Stewart, G Stone, C Sreenan, S Gallagher, AM Murphy
Department of Paediatrics and Neonatology, University Hospital Limerick (UHL) and University Maternity Hospital Limerick (UMHL)

Background and Aims

University Maternity Hospital Limerick commenced Universal Neonatal hearing screening on 18/10/2013. In the 33 month period between then and 18/07/2016, 12,696 newborns have undergone the initial automated otoacoustic emissions (AOE) screening measure. Babies who fail are referred to the Department of Audiology, UHL for Automated Auditory Brainstem Responses (AABR). Babies diagnosed with PCHI by the audiologists are then referred to a Paediatrician for an etiological medical assessment. Paediatricians at UHL follow the current guidelines published by the British Association of Audiological Physicians (BAAP) for this process.
Our aim is to audit this practice in our department.

Methods

Patients with PCHI found through the UNHS programme were identified from the database at the Department of Audiology, UHL. Case files were reviewed. Information regarding investigations requested and results obtained were collated and compared with BAAP recommendations.

Results

A total of 13 patients (7 male, 6 female) were diagnosed with PCHI to date. Of these, 12 had a clinical history, physical examination and developmental examination by a Consultant Paediatrician and 12 had a urinalysis and ECG performed. One patient, recently referred, awaits a scheduled appointment. CMV testing and ophthalmology assessments were completed in 8 cases. MRI brain was performed in UHL in 5 cases, in a tertiary hospital in 2 cases and is awaited in 2 cases. Blood for Connexin 26 and 30 gene mutations was taken in 3 cases and results available for all 3 cases. Extra investigations were performed in 8 cases based on the clinical opinion of the Paediatrician. A yearly review with the Paediatrician is arranged for each patient.

Conclusion

In our unit, BAAP recommendations for the medical investigation of PCHI identified through UNHS are successfully followed in most instances. It remains to be seen if these investigations are adequate for detecting all deafness aetiologies in an appropriate time frame.

A REVIEW OF ABDOMINAL X RAY REQUESTS IN CHILDREN AT UNIVERSITY HOSPITAL LIMERICK

C Sreenan[1], H Deeny[2], B Kenny[3], AM Murphy[2]
1University College Cork, [2]Department of Paediatrics, University Hospital Limerick (UHL), [3]Department of Radiology, University Hospital Limerick (UHL)

Background: Plain films of abdomen (PFA) are frequently used in the investigation of children with abdominal complaints/conditions. They are easy to perform, widely available and relatively inexpensive. Each plain film abdominal radiograph costs approximately €50. They can also be acquired out of hours. However children are more vulnerable to the effects of radiation exposure than adults, due to their longer life expectancies, smaller cross sectional areas (higher dosage per unit mass) and more radiosensitive tissues. The estimated average effective dose of a single PFA is approximately 0.7 mSv (milliSievert). The effects of radiation of children is also gender and age dependent.

Recent studies question the effectiveness of abdominal X-rays in paediatric diagnosis and say they are of limited clinical value.

Aim: The aim of this study was the review the usage of PFA as a diagnostic tool in the paediatric department of a regional hospital.

Methods: A retrospective study was conducted of all plain films of abdomen performed on children under the age of 16 years in UHL over the course of 14 months (January 2014- May 2015).

Information to be collected:
Indication
Age of Child (Less than 16 years of age)
Result (Normal or Abnormal; Abnormality detected?)
Number of Repeat X Rays (No. of PFA and the no. of other radiological investigations)
Speciality of requesting consultant
Time of Day of X-Ray

Results: 580 were performed on children under 16 year over the 14 month period. 49% of these x-rays were ordered out of hours (between 17:00-8:59). 61% of these films were reported as normal. 39% of these films had an abnormality reported with the most popular finding constipation (54%) followed by radiopaque foreign bodies (27%), distention (5%) and obstruction (5%). The paediatric department made the most requests (47%) followed by the emergency department and the surgical department (25% and 23% respectively). The emergency department had a slightly higher percentage of positive outcomes (abnormal) with only 53% reported as normal.

Conclusion: The results show that PFAs remain as an important tool in paediatric diagnosis.

Attrition in the W82GO Paediatric Obesity Programme

Smyth, Miriam[1], O Thorpe[1], S Murphy[1,2], S Doyle[1,2]
[1,2]Paediatrics, UCD, Dublin, Ireland

Aims

The Growing Up in Ireland Study found that 19% of Irish children were overweight and 7% obese (1). This picture is echoed in other countries (2).
Childhood obesity increases the risk of later morbidity and mortality and lowers quality of life (3) (4).
Treatment in childhood is challenging and focuses on healthy lifestyle interventions. Attrition from these programmes is a well-recognized barrier to treatment (5).
Our study sought to investigate the rate of attrition and the reasons for attrition in children attending the W82GO! Healthy Lifestyle Programme, based at Temple Street.

Methods

Patients were recruited over the period 27/08/2013-04/04/2016 to take part in a year long group based outpatient obesity treatment.
Patients who did not complete the group programme were asked to take part in a telephone survey. A questionnaire was completed and results were analyzed using SPSS software.
Full ethics approval was granted by the Temple Street Ethics Committee.

Results

93 patients were recruited. 3 phone calls were made to each guardian, on separate days. 12/93 did not complete the treatment (13%).
6 families agreed to take part in the telephone survey.
The main reasons for ceasing treatment were: ill health (2), child's choice (2), poor results (1) and scheduling of appointments (1). 83% said they would attend a similar service again.

Conclusion

The attrition rate in this group of patients from the W82GO clinic is smaller than those typically found in the literature (13% vs 50%(5)). There was no clear reason why families discontinued the programme, which is consistent with other studies (5).

83% of patients answered yes when asked if they would attend a similar service if offered, and only 1 family were dissatisfied with the service given.

Our findings are limited by our small sample size. Further analysis of attrition in this group is needed to facilitate treatment development.

MODE OF DELIVERY AND NEONATAL INTRACRANIAL BLEEDS IN IRISH CHILDREN WITH SEVERE HAEMOPHILIA BORN BETWEEN 2004 AND 2016

LI Healy[1], R Bradley[1], B Nolaln[1]
[1]Haematology, Our Lady's Children's Hospital, Crumlin, Dublin, Ireland

Introduction: Severe Haemophilia is a severe inherited bleeding disorder associated with spontaneous bleeding .The incidence of neonatal intracranial haemorrhage (ICH) in is estimated at 1-4% .Whether all males with suspected severe haemophilia should be delivered by elective caesarean section, as is the current recommendation in some countries, is controversial.

Aims: To audit the mode of delivery of boys with severe haemophilia between 2004 and 2016. To assess influence of known family history on mode of delivery, neonatal intracranial bleeds and time of diagnosis.

Methods: The healthcare records of all children with severe haemophilia born between 2004 and 2016 were examined. .

Results: 54 children with severe haemophilia were born in this period. 36/54 (67%) had a family history of haemophilia. 15/54 (28%) were delivered by caesarean section. 12/ 36 (33%) with a family history and 3/18 (18%) without a family history were delivered by caesarean section. None of those with known history was born by instrumental delivery compared with 1/18 (6%) without family history. 1/36 (3%) with known family history had a neonatal bleed (liver bleed). 1/18 (6%) without family history had neonatal intracranial bleed. This child was born by vaginal delivery. Median age at diagnosis was 0 days with known family history and 2 months without.

Conclusion: Males with a family history of haemophilia are more likely to be delivered by caesarean section although no child delivered by vaginal delivery in this group had an intracranial bleed.

IMPROVING HANDOVER AND COMMUICATION ON THE POSTNATAL WARD; PAEDIATRIC DEPARTMENT; ALTNAGELVIN AREA HOSPITAL
A QUALITY IMPROVEMENT PROJECT

D McKenna, M McDowell, D Armstrong
[1]Paediatrics , Altnagelvin Area Hospital, Londonderry, N. Ireland

AIMS

Communication between the postnatal SHO and the paediatric team was felt not to be structured and at times was absent. This was an area highlighted that had potential for improvement. The aim of our project was to devise a more structured approach to include a daily meeting and written handover to improve continuity of care.

METHOD

We submitted an initial survey to the paediatric team asking for feedback on the current situation and thoughts for improvement. Based on the results of the survey a daily written handover template was introduced along with a daily meeting between the postnatal SHO and neonatal registrar to discuss patients requiring paediatric input. Our amendments were then audited to assess if our changes had been implemented and effective in the form of another survey completed by the postnatal team.

RESULTS

In the initial survey 70% of the respondents thought that the current handover situation was inadequate. 100% of respondents felt that there should be a daily written handover template and a daily meeting between postnatal SHO and a senior team member. Based on the post-implementation survey it was found that the postnatal meeting occurred and template was used 78% of the time. The main concerns discussed included respiratory distress, neonatal sepsis, cardiology queries and dysmorphic features. On the days that the meeting occurred the postnatal SHO found this to be helpful 100% of the time.

CONCLUSION

We recognised that there was a need to improve the postnatal handover and communication; this was confirmed by the initial survey. We implemented our changes which to-date has transformed the postnatal handover, allowing potential problems to be identified earlier and dealt with, thus improving efficiency and patient care. As this trial has been successful we hope that it will become part of the working day in our department.

ANALYSIS OF BMI MEASUREMENT AND SUBSEQUENT CLINICAL INTERVENTION IN A RANDOM OUTPATIENT COHORT IN GENERAL PAEDIATRIC CLINICS

D J Foley, P Gallagher
[1]Paediatric Department, Midlands Regional Hospital Portlaoise, Portlaoise, Co Laois

AIMS

Overweight and obesity in children is defined as a Body Mass Index (BMI) centile for age of >85th and >95th centiles respectively[1]. Our aim was to assess management of overweight and obesity in our general paediatric clinics. We hoped to identify strengths and shortfalls in our model of care compared to international best-practice guidelines, and to improve our local practice.

METHODS

We analysed data from a random cohort of n=172 patients who attended our general paediatric OPD during a period of two months in 2015, between the ages of 2 to 15 years old. We analysed notes from the two most recent OPD visits and recorded patient data, including co-morbidities of all patients. We then assessed if an appropriate intervention had been made in those of a BMI >85th centile.

RESULTS

Of 78 girls and 94 boys, 12.2% were overweight[2] and 20.9% were obese[2]. 34.3% of asthmatic patients were overweight or obese. Of n=36 obese patients, 13.9% (n=5) were educated to weight management techniques and referred to dietician, and 2.8% were referred to a paediatric endocrinologist. In 5.6% of obese patients, weight issues were discussed but no further intervention made. Of n=57 overweight and obese patients, in 84.2% of patients no intervention regarding weight was made.

CONCLUSION

We found that our levels of overweight and obese patients compare similarly to international figures. Through this audit we have highlighted a failure in our current system in identification, management and intervention in children with overweight and obesity, compared to international best practice. We have therefore implemented the following measures 1. Mandatory BMI calculation for all patients, 2. Patient information booklet to educate patients and families 3. Pro-forma with clear cut-off values for dietician and weight loss program referral, medical investigation, or referral to a tertiary endocrinology centre.

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COMPARISON OF OUR CURRENT PRACTICE IN PERFORMING CHEST X-RAYS OF CHILDREN WITH BRONCHIOLITIS WITH THE STANDARD GUIDELINES

SA Taj[1], S Ahmad[1], A Khalily[1], I Naeem[1]
[1]Paediatric Ward, St. Lukes General Hospital, Kilkenny, Ireland

Aim: To evaluate our current practice of performing CXRs in clinical diagnosis of Bronchiolitis and compare it to the standard guidelines.

Methodology: Retrospective study of 44 patients with Bronchiolitis seen in our Paeds assessment unit from October 2015 to December 2015. Their clinical notes and the details of their CXR status were followed through NIMIS system.

Results: Out off 44, we requested CXRs on 86% of patients who were suspected to have Bronchiolitis on clinical grounds. Among all those CXRs only 8% of CXR reports were reported to be consistent with some sort of minor consolidation or interstitial opacifications. Even those 8% Xrays which were reported to have inflammatory changes did not change the initial diagnosis of Bronchiolitis as all those cases turned out to be RSV Positive in nasopharyngeal aspirate swabs.

Conclusion: Our study shows that in children who were diagnosed as Bronchiolitis on the basis of history and physical examination, requesting CXR on them was unnecessary as it did not change the diagnosis and they were still managed as Bronchiolitis. In contrary to the standard guidelines, we are performing CXRs on 86% of children with Bronchiolitis in our Paediatric assessment unit.
So, it is highly recommended not to request CXR in a child with typical presentation of Bronchiolitis and diagnosis should be made on medical history and physical examination, unless and until there is a high suspicion of any other underlying diagnosis in a sick child.

1. Bronchiolitis in Children(NICE Guidelines No 91) 2. Bronchiolitis in Children(SIGN) 3. Bronchiolitis,Starship clinical Guidelines(Aukland,NZ) 4. A revised Guideline on Bronchiolitis(AAP)

THE "FORGOTTEN JOINT" TEMPEROMANDIBULAR CORTICOSTEROID INJECTIONS IN JIA

S Murphy[1], O Killeen[2]
[1]Medicine, University College Dublin, Dublin, Ireland
[2]National Centre for Paediatric Rheumatology, OLCHC, Dublin, Ireland

BACKGROUND:
Temperomandibular joint (TMJ) inflammation has long been recognised as one of the joints commonly affected in juvenile idiopathic arthritis (JIA). TMJ arthritis has been associated with significant morbidity in the patient, resulting in pain, joint dysfunction and micrognathia. Recognition of this had led to intra-articular corticosteroid injection (IACI) being suggested as a treatment modality. This audit therefore aims to evaluate the effects of IACI on TMJ pain and function, as well as investigate the incidence of IACI-associated side effects.
METHOD: 46 patients with JIA and TMJ pain and/or dysfunction were included in this retrospective study (median age 16 years, IQR 13.25-18.75 years). All patients received TMJ IACI (22 bilateral and 24 unilateral) after an insufficient response to medical management. Patients underwent a clinical examination prior to treatment (T1), as well as two clinical examinations post-treatment (T2 – mean 114 days post-treatment, T3 – mean 334 days post-treatment). The patient's presenting complaint, JIA-subtype, concurrent-medications were noted as well as any manifesting side effects.
RESULTS: Significant pain reduction and an increased inter-cisal distance was observed at T2 for all patients, except for two. No side effects were noted at T2, however 5 patients complained of an increase in TMJ tenderness for up to 36 hours post-treatment, before resolution. At T3, 29 patients complained of a return in orofacial pain, with a decrease in inter-cisal distance . The other 17 patients still report pain reduction in the TMJ joint. This suggests a loss of effect with the IACI treatment.

CONCLUSION: Our results indicate a palliative, but not curative role for IACI in the case of JIA TMJ arthritis. IACI showed to improve patient's pain, as well as TMJ function in the short-term. No significant side effects were seen with the IACI. Our results also showed that IACI plays a role in all sub-types of JAI.

A CONCEPTUAL UTILITY OF TRANSITION THEORY IN THE EXPERIENCE OF LIVING WITH MUCOPOLYSACCHARIDOSIS (MPS) FROM A PARENT'S PERSPECTIVE

Somanadhan , S[1] Larkin, P [2]

1 Temple Street Children's University Hospital, Dublin, Ireland, National Centre of Inherited Metabolic Disorders, University College Dublin.

2. University College Dublin and Our Lady's Hospice and Care Services, Harold's Cross Dublin, Ireland.

Background: Mucopolysaccharidoses (MPS) comprise a group of rare life-limiting conditions characterised by a variable trajectory with prognostic uncertainty. This study focused on the conceptual utility of transition and specifically Van Gennep's (1960) theory of rites of passage and Turner's (1975) theory of liminality, to better comprehend the complex transition experiences of parents of children, adolescents or young adults with MPS.

The aim of the study: This study aimed to broaden and strengthen understanding of MPS diseases' progression and the parents' transitional experience of being in their world of caring for their children over a given period.

Methodology: A qualitative approach, utilising hermeneutic phenomenology informed by the philosophical constructs of Heidegger (1962), Gadamer (1960/1998) and Van Manen (2007/2014) was utilised. Van Manen's (2007/2014) six research activities were used as a guide for data collection through serial interviewing and phenomenological data analysis. A purposively selected sample of parents' (n=8) attending Irish National Centre for Inherited Metabolic Disorders was invited to participate. The data was collected over a 17 month period at three-time point of contact (August 2013-December 2014). Therefore, a total of 19 in-depth interviews were completed. At the time of interviews, these parents had children aged between 6 months and 22 years, diagnosed with the following range of MPS disorders: MPS I syndromes (Hurler syndrome, Scheie syndrome), MPS II (Hunter syndrome), MPS III (Sanfilipo syndrome) and MPSVI (Maroteaux-Lamy syndrome).

Findings: Nine themes and twenty corresponding subthemes were identified during data analysis. Parents spoke about their rite of passage where they move from being the parent of a normal healthy child to being the parent of a child with a life-limiting condition; they predominantly focused on the rite of transition (liminality). It would appear that all the parents in this study were living in a liminal space, experienced a range of uncertainties and made reference to 'no man's land' and 'future is unknown' to describe their world. The findings suggest that parents of children with MPS experienced multiple cyclical movements across all five lived existential, and they gradually developed a way of learning to incorporate MPS in their day to day life.

Conclusion: Overall, this study provided a deeper meaning of the lived experience for parents' of children, adolescents and young adults with MPS in the Republic of Ireland through snapshots in time. This study recommends improving current practice and policy implementation to enhance healthcare practitioner's knowledge and understanding. This will, in turn, improve service delivery and partnership care for the children and their families with MPS.

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DIAGNOSTIC YIELD OF BRAIN MRI IN CHILDREN

Sreenan C[1], Bussmann N[2], Kenny B[3], Murphy AM[2], O'Mahony E[2]
School of Medicine, University College Cork[1]
Department of Paediatrics, University Hospital Limerick (UHL) [2]Department of Radiology, University Hospital Limerick[3]

Aims: The aim of this study was to review the use of MRI brain as a diagnostic tool in Paediatric patients (under 14 years) in a University teaching hospital.

Methods: A retrospective study was conducted of all the MRI's of brain performed on children under the age of 14 years in UHL over a 27 month period (1ST January 2014 - 31ST March 2016). The following were recorded from the NIMIS database, indication, result (normal or abnormal, and if so the abnormality reported), patient age, waiting time, specialty of requesting Consultant.

Results: There were 441 MRI brain preformed on children under the age of 14 in the 27 month study period. The most common ordering indication was seizure(s) (31%), followed by query space occupying lesion (SOL) (24%), developmental delay (18%) and macrocephaly (5%). A total of 73% (322) of the studies were reported as normal. The remaining 27% were reported as abnormal, the most common findings being abnormal signal density, followed by low cerebral volume and cysts. When the indication for the MRI was a seizure(s) the yield was below average with 23% of the scans reporting abnormalities (average 27%). The lowest yield was the indication of query SOL; only 11.5% of these scans had an abnormality reported. Only 1 in 28 scans performed where headache was the only symptom indicated in the request was reported as abnormal. The majority of the MRIs (192) were performed within one week of being ordered (43.5%). The 2nd highest percentage (29.5%) were performed within a three and six month period from the ordering date. A total of 18% were performed in children less than 1 year of age with 47% performed in an inpatient setting.

Conclusion: Although Brain MRI is a very useful diagnostic tool in children, the vast majority of scans in our study were normal

FIFTH NORMAL SALINE DISGUISED AS STANDARD TOTAL PARENTAL NUTRITION: THE HIDDEN DANGER

P Donnelly[1], E McCorry[1], C Flannigan[1]
[1]Paediatric Intensive Care Unit, The Royal Belfast Hospital For Sick Children, Belfast, Northern Ireland

Aims: Hyponatraemia is of particular concern within Northern Ireland due to previous adverse incidents resulting in unexpected mortality. In PICU there was concern regarding cases of new onset hyponatraemia in post-operative appendicectomy patients. A retrospective review was performed to assess the fluids each patient received in the 24 hours preceeding the onset of hyponatraemia.
Method: A retrospective review analysed ten patients admitted to the paediatric intensive care following appendicectomy assessing for the development of new-onset hyponatraemia. These patients were identified using 'appendix' 'appendicectomy' 'appendectomy' from the PICU discharge database. The laboratory results for these post-operative appendicectomy patients were then reviewed looking for new-onset hyponatraemia after arrival to the PICU. Hyponatraemia was definded as a serum sodium dropping to less than or equal to 134mmol/litre from a previously normal limit between 135 and 145mmol/litre. The patient clinical notes were retrieved and reviewed assessing the fluid prescription charts and the pharmacy PN prescriptions.
Results: New-onset hyponatraemia occurred in six of the ten identified patients. The four patients who did not become hyponatraemic received 0.9% saline during their admission.One of the six patients received 0.9% saline prior to developing hyponatraemia.
The remaing five out of the 6 hyponatraemic patients received various forms of hyponatraemic fluids in comparison to normal saline. Three of the patients received individulaised TPN and the remaining two patients received standard bags of TPN. Each patient was on variable amounts of infusions made up in 0.9% saline and this sodium content was considered when calculating a patients total sodium intake in the 24hours preceeding hyponatraemia. The amount of sodium received ranged from 2.9mmols/kg/day to 7mmols/kg/day. Normal maintenance requirement for sodium is reported to be 2-4mmols/kg/day.

Patient Number	Fluids received	TPM/mls	Infusions/mls	Total sodium content in 24 hours	Sodium mmols/kg/day	Total sodium content in equivalent volume of 0.9% saline	Difference in sodium content	TPN equivalent %saline
1	Special TPN and infusions	880mls	252mls	120.9mmols	7mmols/kg/day	174mmols	-53.1mmols	0.5% saline
2	Saline	No TPN	-	-	-	-	-	N/A
3	Standard TPN and infusion	749mls	911mls	158.7mmols	5.8mmols/kg/day	255mmols	-96.9 mmols	0.15% saline
4	Special TPN plus infusion	1250mls	152mls	133.4mmols	5.9mmols/kg/day	211mmols	-78.3mmols	0.5% saline
5	Special TPN plus infusion	1050mls	4.25mls	36.4mmols	2.9mmols/kg/day	162mmols	-126mmols	0.2% saline
6	Standard TPN plus infusion	442mls	462.75mls	82.25 mmols	4.9mmols/kg/day	139.3 mmols	-57mmols	0.15% saline

Conclusion: The use of standard and individualised TPN does not mitigate against the risk of hyponatraemia. Awareness needs to be that standard TPN is more hyponatraemic than 0.18% solution.

PHYSIOLOGICAL PARAMETERS DURING TREATMENT WITH HIGH FLOW HUMIDIFIED OXYGEN THERAPY IN CHILDREN WITH SEVERE RESPIRATORY DISTRESS

T Beechinor[2], C O'Connor[1], DM Murray[1, 2]

[1]Paediatrics & Child Health, Cork University Hospital, Cork, [2]Paediatrics & Child Health, University College Cork, Cork

Introduction

Humidified, High Flow, Oxygen Therapy (HHFOT) is becoming widely used in paediatrics as a supportive therapy to avoid treatment escalation, PICU admission, and reduce length of admission in patients with severe respiratory illness. Little data is available regarding efficacy of HHFOT in severe respiratory distress in a ward setting.

Aim

To determine whether initiation of HHFOT was associated with improvement in physiological parameters in children with severe respiratory distress or hypoxia on standard oxygen therapy.

Methods

A prospective study of all children (age 0-16 years) who underwent HHFOT in CUH, from October 2014 to May 2015, was conducted. HHFOT was commenced in children with severe respiratory distress at clinician's discretion. Patient oxygen saturation (SpO_2), heart rate (HR), and respiratory rate (RR) were measured before commencement of therapy and hourly thereafter. A venous blood gas was performed prior to itherapy initiation and when clinically indicated.

Results

Thirteen patients were commenced on HHFOT during the study period. Median (range) age was 10 months (13 Days to 59 months). No adverse events were recorded. One patient was transferred to PICU and another reverted to standard oxygen therapy. Median HR, SpO_2 and RR improved gradually following initiation of HHFOT. This fall in HR reached statistical significance after 32 hours, with HR decreasing from 158 beats/min (IQR: 139-166) to 137 beats/minute (IQR: 130-141, p=0.043). Following 48 hours of HHFOT, RR decreased from 58 breaths/min (IQR: 42-71) to 36 breaths/min (IQR: 33-40, p=0.023). At 48 hours, median SpO_2 increased from 97% to 99.5% (p=0.027).

Conclusions

HHFOT is well tolerated by paediatric patients with severe respiratory illness in a ward setting, improves oxygen saturation, and shows significant decreases in median heart and respiratory rates following 48 hours of treatment.

MANAGING ACUTE BRONCHIOLITIS: ARE WE IN LINE WITH CURRENT NICE GUIDELINES

T McGrath, R Drew, S Kelleher
[1]General Paediatrics, Temple Street Children's University Hospital, Dublin, Ireland
[2]Microbiology, Temple Street Children's University Hospital, Dublin, Ireland
[3]General Paediatrics, Temple Street Children's University Hospital, Dublin, Ireland

Aims: Bronchiolitis is a common respiratory tract infection in young infants that frequently results in hospitalisation. The NICE guidelines for the management of acute bronchiolitis were updated in June 2015. The guideline does not recommend the use of antibiotics, hypertonic saline, adrenaline, salbutamol, ipratropium bromide and corticosteroids in bronchiolitis management. We audited the management of acute bronchiolitis against the existing NICE guideline to highlight any areas for improvement and to improve compliance with evidence based guidelines.

Methods: A retrospective audit of patients, admitted to hospital between 1st November and 31st March 2016, was carried out using the NICE Clinical Audit tool for bronchiolitis management.

Results: 1052 patients presented to emergency department with a diagnosis of acute bronchiolitis. A total of 223 patients were admitted to hospital, 40 of whom were audited. The average length of stay was 4 days and 90% of patients tested positive for RSV. 100 percent of patients with an oxygen requirement received supplemental oxygen. 78 percent of patients were treated with hypertonic saline on a prn or regular basis while 23 percent of patients received nebulised salbutamol. Incidentally a total of 6 patients received antibiotics, primarily based on CXR changes observed and in the absence of documented fever in 4 of these patients. 1 patient was treated with systemic corticosteroids and two patients were treated with nebulised ipratropium bromide.

Conclusion: The management of acute bronchiolitis was largely consistent with the existing NICE guideline. There was significant non-compliance identified in three key areas; use of 1) hypertonic saline, 2) salbutamol, 3) antibiotics. Studies have shown that the use of hypertonic saline is not cost effective and does not reduce length of stay in hospital. Restricted availability of hypertonic saline on wards may in actual fact improve compliance along with education of staff.

OUTCOME OF PICU ADMISSIONS WITH STATUS EPILEPTICUS

A Kalim[1], D Doherty[1]
[1]Pediatric intensive Care Unit.Childrens' University Hospital. Temple Street.

Introduction

Status epilepticus (SE) is defined as a prolonged seizure (>30 min) or recurrent seizures without return to baseline between seizures[1].All seizures lasting >5 minutes are at risk of progressing to SE, with prolonged seizure increasing the mortality and morbidity risk[2]. Management pathways[3] aimed at decreasing the interval between onset of seizure and initiation of treatment are important to attenuate these risks and reduces the incidence of SE.

Aims

The aim of our audit was to document the adherence of hospital guidelines in the management of patients presenting to PICU in SE, along with their underlying diagnoses, medications and length of PICU stay.

Methods

A retrospective audit of PICU admissions with SE over three years (September 2012 to August 2015) was undertaken. Case notes, drug prescription sheets, PICU discharge summaries and transfer letters from referring hospital informed the audit.

Results

We identified 19 patients admitted to PICU with SE of which 13 (68%) initially presented to outside hospitals. The SE pathway was followed in 15 (73%) patients up until they required intubation and seizure control with midazolam infusion. 4 (38%) patients were not compliant with the SE protocol did, but these patients also did not require midazolam infusion or intubation.

Regarding pre-existing diagnoses, 16 patients had an underlying neurological disorder (including cerebral palsy, Dravet syndrome and Retts syndrome), 3 patients were diagnosed with prolonged febrile seizures of which 2 were extubated within 12 hours of admission.

Conclusion

Adherence to the treatment pathway for SE was generally good. However, there is a subgroup of patients deemed to require PICU admission where there was a deviation from the guideline. This may reflect clinical judgment regarding the underlying seizure aetiology (e.g. febrile seizure).

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PHYSIOLOGICAL VALUES FOR PH-IMPEDANCE STUDIES IN CHILDREN, A STUDY OF MORE THAN 1000 SUBJECTS

Taha I Yousif1, N Thapar2, K Lindley2, O Borrelli2, M Mutalib2
1Gastroenterology, Royal Victoria Infirmary, Newcastle , U.K
2Gastroenterology, Great Ormond Street Hospital, London, U.K

Objectives and study:

Gastro-Oesphageal reflux (GOR) is a normal phenomenon that happens in children and adults. The prevalence ranges between 50% at 3 months and 5% at one year of age. Currently the gold standard method for diagnosis is intra-luminal multi-channel pH Impedance (MII- pH) study. Reference values used now are based on expert opinions, as data is limited. We conducted this research to evaluate the normal values of MII-pH in children less than16 years of age. We also performed subgroup analysis comparing infants less than 1 year old and older children.

Methods:

Results of patients less than 16 years referred to Great Ormond Street Hospital Gastroenterology unit for assessment of GORD in the last 6 years were obtained from the electronic database. We excluded patients with any risk factor for GORD to calculate the normal values.

Results:

Out of 1183 patients 849 patients' reports were studied as the normal population with no underlying risk factor for GORD. As the data distribution for all variables were skewed we used the median and interquartile ranges. We found that our population's median values are in general less than the currently used ones. The median for Acid exposure percentage in our cohort was 1.7% versus 3%, number of reflux episodes 42 versus 70 in current accepted levels. The median (IQR) of all reflux episodes was 39 (20-65) and for infants was 52.5 (31-70) whereas for older children 38 (21-64).

Conclusion:

To our knowledge this is the largest data available on MII-pH in children. This study is limited by the nature of the population used although every effort was made to normalise the population of interest. We recommend a larger study on normal children to establish whether we should lower currently used values, this however will be faced by ethical dilemma in accepting normal children to be tested.

Conflict of interest

We declare No conflict of interest

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AETIOLOGICAL RISK FACTORS FOR DEVELOPING PAEDIATRIC INFLAMMATORY BOWEL DISEASE IN A PROSPECTIVE COHORT.

I Yu[1], T Raftery[2, 3], E O'Neill[1], A Carey[2, 3], S Kiernan[3], M Hamzawi[3], K O'Driscoll[3], S Quinn[3], A Broderick[1, 3], B Bourke[1-3], S Hussey[1-3]
[1]Academic Centre for Paediatric Research, University College Dublin, Dublin , Ireland
[2], National Children's Research Centre, Dublin, Ireland
[3], Our Lady's Children's Hospital Crumlin, Dublin, Ireland

AIM: To assess potential familial, demographic and environmental risk factors for developing PIBD (Paediatric Inflammatory Bowel Disease) in a prospective national cohort of patients.

METHOD: Parents of participants in the DOCHAS study (Determinants and Outcomes in Children and Adolescents with IBD) were asked to complete a standardised questionnaire at diagnosis. Patients diagnosed between January 1st 2012 and June 30th 2015 were included. Information including pre-diagnosis home environment, location, smoking exposure, medication exposure as well as extended family histories were recorded prospectively. Patients were classified according to the Paris Classification of PIBD. Data was exported from the study database to SPSS version 20 format for data analysis.

RESULTS: 356 subjects were recruited; 64 were controls, 145 had Crohn's disease (CD), 123 had ulcerative colitis (UC), 4 had Atypical UC and 20 had IBD-unclassified. More males than females were diagnosed with CD (3.03:1), compared to UC (1:1.12). The mean age of those with UC was 13.14, and CD was 12.67. PIBD was associated with maternal smoking during pregnancy (11.4% vs 20.8% [CD] and 29.2% [UC], p=0.02). A family history of autoimmune disease (atopic disease, autoimmune thyroid disease, ankylosing spondylitis, coeliac disease, multiple sclerosis, psoriasis, systemic lupus erythematosus/lupus, rheumatoid arthritis and type 1 diabetes) gave a more likely diagnosis of CD than UC (45.8% vs 27.6%, p=0.001); this was also found in patients previously diagnosed with autoimmune disease (54.2% vs 17.8%, p=<0.001). Patient and paternal atopic disease were more associated with CD than UC (respectively 54.7% vs 18.9%, p=<0.001 and 45.9% vs 16.2%, p=0.049). There were no significant differences between patients with CD and UC in relation to prior antibiotic use, NSAID exposure, previous infective enteritis or appendicectomy.

CONCLUSION: This is the first prospective study of potential risk factors for developing PIBD. Gender, maternal smoking exposure and a family history of autoimmune disease were associated significantly with certain IBD phenotypes. Ongoing prospective research is required to further elucidate these associations.

PREVENTION OF INSULIN-INDUCED HYPOGLYCAEMIA IN TYPE 1 DIABETES WITH A PREDICTIVE LOW-GLUCOSE MANAGEMENT SYSTEM

M B Abraham[1,2], M de Bock[1,3], N Paramalingam[1,3], **M J O'Grady[1]**, T T Ly[1-3], C George[1], A Roy[4], G Spital[4], S Karula[5], K Heels[5], R Gebert[6], J M Fairchild[7], B R King[8], G R Ambler[5], F Cameron[6], E A Davis[1-3], T W Jones[1-3]
[1]Department of Endocrinology and Diabetes, Princess Margaret Hospital for Children, Perth, Australia
[2]School of Paediatrics and Child Health, The University of Western Australia, Perth, Australia
[3]Telethon Kids Institute, The University of Western Australia, Perth, Australia
[4]Medtronic MiniMed, Northridge, California, USA
[5]Institute of Endocrinology and Diabetes, The Children's Hospital at Westmead, Sydney, Australia
[6]Department of Endocrinology and Diabetes, Royal Children's Hospital, Melbourne, Australia
[7]Department of Endocrinology and Diabetes, Women's and Children's Hospital, Adelaide, Australia
[8]Department of Endocrinology and Diabetes, John Hunter Children's Hospital, Newcastle, Australia

Aims
Sensor-augmented pump therapy (SAPT) with algorithms to predict impending low blood glucose and suspend insulin delivery has the potential to reduce hypoglycaemia exposure. The aim of this study was to determine whether a predictive low glucose management (PLGM) system is effective in preventing insulin-induced hypoglycaemia in type 1 diabetes under controlled conditions.
Methods
In this multicentre randomised crossover trial, two protocols were used to induce hypoglycaemia in an in-clinic environment. (A) Insulin bolus: Insulin was administered as a manual bolus through the pump. (B) Increased basal insulin: Hypoglycaemia was induced by increasing basal rates overnight to 180%. For both protocols, participants were randomized and studied on 2 separate days; a control day with SAPT alone and an intervention day with SAPT and PLGM activated. The predictive algorithm was programmed to suspend basal insulin infusion when sensor glucose was predicted to be <80 mg/dL (4.4 mmol/L) within 30 minutes. The primary outcome was the requirement for hypoglycaemia treatment (symptomatic hypoglycaemia or plasma glucose <50 mg/dL (2.8 mmol/L) and was compared in both control and intervention arms.
Results
With insulin bolus, 24/28 participants required hypoglycaemia treatment with SAPT alone compared to 5/28 participants when PLGM was activated ($p \leq 0.001$). With increased basal rates, all the eight SAPT-alone participants required treatment for hypoglycaemia compared to only one with SAPT and PLGM. There was no post pump-suspend hyperglycemia with insulin bolus ($p = 0.4$) or increased basal rates ($p = 0.69$) in participants with a full 2-hour pump suspension on intervention days.
Conclusions
SAPT with PLGM reduced the requirement for hypoglycaemia treatment following insulin-induced hypoglycaemia in an in-clinic setting.

PTEN HAMARTOMA TUMOUR SYNDROME SCREENING AUDIT – NORTHERN IRELAND 2016

R Moore[1], V McConnell[1]
[1]Clinical Genetics, Belfast Trust, Belfast, Northern Ireland

Aims:
To characterise the presentation of children with PTEN hamartoma tumour syndrome (HTS) to the genetics department and assess tumour surveillance advice given to adult patients in Northern Ireland with confirmed PTEN HTS.

Methods:
A coding search was carried out on our regional database to identify all patients with a confirmed diagnosis. The written/electronic notes of these patients were reviewed. Our patients were benchmarked against the surveillance advice laid out by the Pan Thames Cancer Genetics Group in 2014. We used the National PTEN audit inclusion criteria of including patients >16 years, those with a pathogenic/likely pathogenic PTEN mutation or at 50% risk and those who had received advice between 01/08/10-01/08/2015.

Results:
21 patients were identified, making up 10 families. 70% of the families were identified through a proband child with developmental delay. The remaining 30% were identified through a proband adult. All patients had a pathogenic PTEN mutation.
We looked at the 6 confirmed paediatric cases. All children had a triad of developmental delay, macrocephaly and haemangiomas. 2 children had de novo mutations and 4 had inherited mutations. Of the inherited mutations, 50% of these had a known affected relative and 50% came from previously unknown families.
From the adult tumour screening audit; annual breast screening was recommended for 67% of our patients and annual thyroid USS for 54%. Widely variable colonoscopy and renal USS screening was recommended for 77% and 65% of patients, respectively. No cases of Lhermitte-Duclos disease were identified.

Conclusions:
70% of our PTEN families were identified via paediatric referrals. PTEN mutations must be considered in children presenting with developmental delay, macrocephaly, haemangiomas and a family history of cancer. Identification of these children is crucial for effective cancer surveillance.
We recognise the need for regional PTEN tumour surveillance guidelines to be produced and implemented through a specialist, regional PTEN clinic.

The use of External Ventricular Drains (EVD) in the management of open myelomeningoceles in Ireland

R Finnegan[1], J Kehoe[2], O McMahon[2], V Donoghue[3], D Crimmins[2], J Caird[2], J Murphy[1]
1Department of Neonatology, Childrens University Hospital, Temple St, Dublin, 2Department of Neurosurgery, Childrens University Hospital, Temple St, Dublin, 3Department of Radiology, Childrens University Hospital, Temple St, Dublin, Ireland

Aims: The aim of this study is to outline the role of EVDs in the management of open myelomeningocele repairs in the neonatal setting in Ireland.
Methods: Retrospective case-control study involving all infants who underwent open myelomeningocele repair in TSCUH between January 2009-April 2016. Medical charts and laboratory data was reviewed on all infants meeting the inclusion criteria. Data was inputted into an electronic database using Microsoft Excel.
Results: 139 neonates underwent open myelomeningocele repair in TSCUH in the 6.5year period, EVDs were inserted in 35 cases.
Demographics of each group(table 1).

	EVD inserted : Number(%)	**EVD not inserted : Number(%)**
No of cases	35 (25)	104 (75)
Gender	F:M 21(60): 14(40)	F:M 57(55): 47(45)
Position	Thoracic – 11(31) Lumbar – 23 (66) Sacral – 1(3)	Thoracic – 15(14) Lumbar – 69(66) Sacral – 20(19)
Size of lesion (using vertical length of lesion, where available)	</= 5cm – 13(37) 5cm – 10cm – 9(26) >/= 10cm – 3(6) Not documented – 10 (29)	</=5cm – 59(57) 5cm – 10cm – 29(28) >/= 10cm – 7(7) Not documented – 9 (8)
Ventricular Index	Median 50% (31-83%) Not documented - 3	Median 46%(29-78%) Not documented - 25
Documented presence of Chiari 2 malformation on ultrasound	21 (60)	43 (41)
Number of cases requiring a shunt	34 cases(97)	66 cases (63)

The median day of insertion of EVD post myelomeningocele repair was on day 1(range D1-D69), with the median duration of time insitu being 8 days(range 1-37 days). 34 EVDs were replaced by a ventricular-peritoneal shunt. The main reasons for insertion were: time of primary closure(19),infected VPshunt(5),wound leakage(4),meningitis/ventriculitis(3),blocked VPshunt(2),increasing OFC(1)and aid with wound closure(1).

The main indicators for insertion of an EVD drain by the neurosurgical team at the time of primary closure included pre-operative OFC status, size of the lesion and ventricular index measurements on ultrasound scanning.

The median volume of CSF drainage from EVD on day 1 was 63.25ml/24hours(range 17-240mls/24hours). All children with an EVD insitu had ml-for-ml replacement of CSF fluid with 0.9%NaCl. 10(29%)cases developed hyponatraemia.

CSF samples were sent to the lab on 20 patients. 4 patients had a significantly raised WCC:RCC count, 2 having positive growth of organisms on culture.

Conclusions: EVD were used in 25% of cases of open myelomeningocele repairs from Jan 2009-Apr 2016. Majority of EVDs were inserted at the time of primary wound closure to support wound healing.
On average, an EVD drained between 17ml-340ml/24hours on day one.
EVD drains have become very popular, however the use of EVDs carries the potential risks of hyponatraemia, infection and the need for a second operation and general anaesthetic for the insertion of a VP shunt, which occurred in 97% of cases.

A RETROSPECTIVE AUDIT OF SURGICALLY INSERTED PERMANENT PACEMAKERS FOLLOWING CARDIAC SURGERY: REDUCING MULTIPLE PROCEDURES IN THE POST-OPERATIVE PERIOD

ST Kelleher[1], J McGuinness[2], M Redmond[2], L Nölke[2,] O Franklin[2]
[1]School of Medicine, University College Dublin, Dublin , Ireland
[2]Cardiology Department, Our Lady's Children's Hospital Crumlin , Dublin , Ireland

AIMS:
Arrhythmias including complete heart block are a complication of cardiac surgery. All children undergoing an open cardiac surgical procedure in Our Lady's Hospital Crumlin have temporary pacing wires placed in view of this risk. However, there is little guidance in literature as to when they should be removed. By retrospectively auditing a paediatric surgical cohort who ultimately required insertion of a permanent pacemaker (PPM), we aimed to document the timing of onset of the underlying arrhythmia. Knowledge of the timing of onset facilitated safe removal of pacing wires concurrently with chest drains (day 1 or 2 post-operatively) reducing the number of procedures under sedation required.

METHODS:
We conducted a retrospective chart review of a cohort of patients who had a PPM inserted over a 3 year period from January 2013 and December 2015. Patients with congenital heart block and those undergoing elective PPM replacement were excluded.

RESULTS:
Overall, there were 46 surgically inserted PPMs, 19 of which were placed for arrhythmias resulting as a complication of cardiac surgery.

17 of the 19 patients (89%) presented within the first 24 hours and in 70% of cases, the arrhythmia was noted in the operating theatre. The two remaining patients did not require pacing throughout their admission and represented post discharge.

The commonest indication for PPM insertion was complete heart block (63%). The surgeries in question were typically complex, with 18 patients (95%) having multiple cardiac defects.

CONCLUSION:
All patients who required a PPM in the immediate post-operative period (i.e. *during the same admission*) required pacing within the first 24 hours. Patients who are in sinus rhythm for the first post-operative day are unlikely to require pacing. Therefore, it is safe to remove pacing wires and chest drains concurrently, an intervention usually performed on the 3rd post-operative day, reducing the number of procedures requiring sedation.

CLINICAL MANIFESTATIONS AND RENAL OUTCOME IN CHILDREN WITH PRUNE BELLY SYNDROME

COSTIGAN CS[1*], CHHABRA R[2*], O'KELLY P[2], CONAUGHTON D[2], QUINN F[3], AWAN A[4], CONLON PJ[2,5], WALDRON M [1]
***CO FIRST AUTHORS**

1. **DEPARTMENT OF NEPHROLOGY, OUR LADY'S CHILDREN'S HOSPITAL CRUMLIN, DUBLIN**
2. **DEPARTMENT OF NEPHROLOGY, BEAUMONT HOSPITAL, DUBLIN**
3. **DEPARTMENT OF UROLOGY, OUR LADY'S CHILDREN'S HOSPITAL CRUMLIN, DUBLIN**
4. **DEPARTMENT OF NEPHROLOGY, THE CHILDREN'S UNIVERSITY HOSPITAL, TEMPLE STREET, DUBLIN**
5. **ROYAL COLLEGE OF SURGEONS IRELAND, ST STEPHEN'S GREEN, DUBLIN**

Background
Prune Belly Syndrome (PBS) is a rare and complex disorder. Data on clinical manifestations and renal outcome in children with PBS is limited.

Methods
To identify the varying clinical manifestations of PBS and determine the renal outcome we analysed a cohort of 27 patients diagnosed at our Paediatric Nephrology/Urology centres with the syndrome between 1969 and 2015. The primary end point was end stage renal failure (ESRF) or death. We sub-divided the cohort clinically into those with defined obstructive uropathy and those with no identifiable obstructive lesion and also by time of diagnosis; prior to or after 1995. We compared outcomes between these groups.

Results
Overall mortality in our cohort was 10.3% (n=3). 59.2% (n=16) reached ESRF, the 3 patients who died were included in this group, but only one death was directly related to renal failure. Of the 15 patients in the "Obstructive group" 10 (66.6%) reached ESRF, as did 6 (50%) of the 12 in the "Non Obstructive Group".

Conclusion
PBS is a complex disorder. Its urological manifestations are variable and reflect a spectrum of severity from early onset renal failure to near normal renal function. Even in those with severe renal dysfunction outcomes are relatively good with 94% transplanted and greater than 90% graft survival at 5 years in that group. Mortality in the cohort was relatively low (10.3%, n=3), with only one death directly attributable to complications of PBS. Management of PBS is difficult but successful treatment is possible, with good long term outcome.

GYNAECOLOGICAL MORBIDITY AMONGST ADOLESCENT INPATIENTS: A TEN YEAR REVIEW

E Corry [2], A McCann[1], M Katre[1], K Hickey [2], AM Murphy [1]
Department of Paediatrics, University Hospital Limerick[1]
Department of Gynaecology, University Hospital Limerick[2]

BACKGROUND AND AIMS

While life threatening Gynaecological pathologies are rare in youthful populations, inpatient stays to exclude surgical and oncological conditions are not uncommon.
The purpose of our study is to explore the types of gynaecological pathologies resulting in hospital admission in modern Irish adolescents (in particular 14, 15 and 16yr olds) with a view to appropriate infrastructure and workforce planning for the future in our region.

METHODS

The study period was taken as the 10 year time frame between 01.07.2006 and 01.07.2016. All patients ≤16 years admitted to University Hospital Limerick (UHL) in whom a gynaecological diagnosis was established were identified from hospital databases. Age, duration of stay, surgical procedure, diagnosis, speciality of Consultant and type of ward were documented. Data from those aged 14-16 was analysed separately.

RESULTS

A total of 331 patients with gynaecological pathologies were admitted during the study period with 66% between ages 14-16. (Mean age 12.99 years, range neonate to 16 years). This represented 3% of total admissions for this age group. Diagnoses in order of frequency were 1) Conditions of adnexa n=207, 2), Conditions affecting menstrual cycles n=37, 3), Inflammatory and infectious conditions of vulva and vagina n=31, 4), Non Inflammatory conditions of vulva and vagina n=19, 5 , Abnormal uterine and vaginal bleeding n=15.
The average duration of admission was 2.44 days (range 1-37). Patients were admitted to paediatric wards in 46% of cases, surgical 17%, mixed 17%, gynaecological 9%, medical 8%, unrecorded 3%. Specialities of admitting Consultants were Surgical 62%, Paediatric 17%, Gynaecology 18%, Physician 3%. Only 2% of those aged 14-16 were admitted under Paediatricians. Less than 16% per housed in age appropriate wards.

CONCULSIONS The appointment of a specialist in Adolescent Medicine would lead to the creation of age appropriate environments for patients at this sensitive developmental age with a standardised approach to care.

PARENTAL FEVER KNOWLEDGE: NECESSARY BUT INSUFFICIENT FOR EFFECTIVE CARE

Kelly M[1,2], Sahm L J[1, 3], Shiely F[2,4], O'Sullivan R[5,6], Mc Gillicuddy A[1], Dahly D[2,4], Herlihy R[1], McCarthy S[1, 7]

[1]Pharmaceutical Care Research Group, School of Pharmacy, University College Cork, Ireland; [2]HRB Clinical Research Facility, Mercy University Hospital, Cork, Ireland; [3]Department of Pharmacy, Mercy University Hospital, Cork, Ireland; [4]Department of Epidemiology and Public Health, University College Cork, Cork, Ireland; [5]School of Medicine, University College Cork, Cork, Ireland; [6]National Children's Research Centre, Dublin 12, Ireland; [7]Department of Pharmacy, Cork University Hospital, Cork, Ireland.

Aims: Fever, despite being one of the most common childhood symptoms, causes undue concern for parents (1, 2). The aim of this study was to describe parental knowledge, attitudes and beliefs regarding fever in children aged five years of age and younger.

Methods: Ethical approval was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals prior to starting the study. Data for this study were collected at purposively selected primary schools in the Cork area using a paper based survey. Further data were collected from a cross-sectional internet based study using a convenience sample of parents via websites and web pages previously identified in an interview study (3). The questionnaire administered in this study was developed and used in previous research (4-7). Respondent's answers were entered into a data file and analysed using SPSS version 22.0 (SPSS, Inc., Chicago IL).

Results: Overall 1104 parents contributed to this research. Almost two thirds of parents (60.4%, n=667) were worried about the consequences of fever in general, while only 27.2% of parents (n=301) were of the opinion that fever may be beneficial to their child's health. Almost two thirds of parents (63.1%, n=695) identified temperatures at which they define fever that were either below or above correct definition of temperature ($38^{O}C$). Almost two thirds of parents (64.6%, n=714/1011) alternate between fever reducing medications.

Conclusion: Parental knowledge concerning fever as a symptom and fever management was found to be deficient. Opportunities to engage with parents when attending healthcare professionals must be used to elucidate what parents already know and to provide parents with relevant and timely information on how to manage the symptom. This could decrease unnecessary presentation at urgent and emergency care services. Pharmacists as one of the most accessible healthcare professionals have a large role to play in providing this information to parents.

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ASSESSING THE CAUSE OF PERMANENT CHILDHOOD HEARING IMPAIRMENT IN IRELAND. CAN WE DO IT BETTER?

AN Costello[1], N van der Spek[1], JM Balfe[2], DL Waldron[3]
[1]Paediatric Department, Cavan General Hospital, RCSI, Cavan, Ireland
[2]National Children's Hospital, The Adelaide and Meath Hospital, Tallaght, Dublin, Ireland
[3]Paediatric Department, St Luke's Hospital, RCSI, Kilkenny, Ireland

Aims:
Since 2011 the Universal Newborn Hearing Screening program (UNHS) annually identifies 135 infants with permanent childhood hearing impairment (PCHI) in Ireland. It is essential to promptly commence an aetiological assessment of UNHS PCHI (The Assessment) and manage associated co-morbidities and potentially treatable causes e.g. CMV (10% of PCHI), subsequently preventing or reducing disability. Following an external UNHS audit in 2015, we aim to evaluate the provision, structure and safety of The Assessment and associated services in Ireland, with a view to identify and address limitations and propose key components of a model of care.

Methods:
Questionnaire to 38 paediatricians of 18 assessment centres, evaluating current practice.

Results:
Response rate 97.4%of 18 centres.
90.9% also see PCHI children from sources other than UNHS.
Assessment waiting lists are unacceptably long.
18.2% received specific PCHI training and felt suitably competent.
66.7% fear resource limitations pose a serious risk in missed/delayed diagnosis. 97% stated The Assessment added to existing work load. 15.2% PCHI patients are seen in a dedicated clinic and 75% of responders provide ongoing follow up.
25.8% diagnose Congenital CMV causing PCHI before six weeks of age. 27.3% have a clear referral pathway to an infectious disease service.
3% are part of a support network; 92.9% expressed desire to join one.
40% use (UK) BAAP guidelines; 90.9% would use an Irish guideline if one was nationally agreed.

Conclusion:
Neonatal hearing screening is well established in Ireland but the medical aetiological assessment of PCHI children is distributed over a large number of Paediatricians who are inadequately resourced, posing a clinical risk. We propose creating a more regional approach provided by an adequately resourced paediatrician with expertise in child development, knowledge of disability service structures and all relevant aspects of the aetiological assessment of children with permanent hearing impairment using a standardised process.

Report on the external quality assurance review of the universal hearing screening programme in Dublin North East and Dublin mid Leinster: recommendation action plan. HSE and Lesley Burn Consultancy, January 2015. Final version 23/03/2015.

A PROSPECTIVE STUDY OF FEBRILE CONVULSIONS IN GENERAL PAEDIATRIC PRACTICE

N. Bussmann, A.M. Murphy, Elizabeth O 'Mahony
Department of Paediatrics, University Hospital Limerick

Aims

A febrile convulsion is a seizure associated with a fever caused by infection or inflammation outside the central nervous system in a young child who is otherwise neurologically normal. Simple febrile convulsions last less than 15 minutes and do not reoccur within 24 hours, complex febrile convulsions last longer than 15 minutes, have focal features and can reoccur within 24 hours

A prospective study was carried out in a Paediatric unit with a catchment area of 100,000 children and 15,000 paediatric Emergency Department presentations annually.
The objective of this study was to review all the patients admitted under one Paediatrician and to identify common parameters in this population's presentation as well as their management, compared to those identified in a literature review.

Method

A literature review of paediatric febrile convulsions identified common parameters in presentation and management. A simple table was created from these parameters to enable collection of specific data from patient charts.
All paediatric patients admitted under one Paediatrician from July 11th 2015 to 31st May 2016 with a febrile convulsion (typical and atypical) were included.

Results

There were 19 patients reviewed during this 10 month period (age range 1 to 3 years) (10 female, 9 male). All 19 presentations were documented to have a febrile seizure lasting under 5 minutes. No child had a focal seizure. Four children suffered from recurrent febrile seizures. Of these, three children had further febrile seizures in the same illness. One child was investigated for delayed walking but was developmentally normal at presentation. No child required resuscitation or neonatal admission. 12 of the 19 children had a family history of febrile seizures. 10 patients either had an EEG organised during admission or as an outpatient. All patients had blood tests. No child underwent a lumbar puncture. Fever was attributed to viral infection. Thirteen children were discharged with a prescription for antibiotics and one for Tamiflu. One child went on to develop a seizure disorder and required anti-epileptic medication. Thirteen children were discharged with prophylactic buccal midazolam.

Conclusion

All children were within the expected age-group. The majority had simple febrile seizures. Outside of the advice of the AAP clinical practice guideline, an EEG was organised for over half of patients and blood tests drawn.[2]

This review reflects on the typical presentation of febrile seizures but highlights a practice outside of the AAP guideline. A local clinical practice guideline could be developed to guide practitioners on consistent management to avoid superfluous investigations.

"BEREAVEMENT COUNSELLING FOR HEALTHCARE WORKERS IN THE AFTERMATH OF CHILD DEATH".

D O'Sullivan, E Corry , G Stone , P Stewart , H Noonan , AM Murphy
Department of Paediatrics and Neonatology University Hospital Limerick (UHL) & University Maternity Hospital Limerick (UMHL).

Background: Employers have a duty of care under common and statute law to ensure care for the health and safety of their workers. There are moral and legal duties to consider the psychological needs of personnel following exposure to traumatic events related to the workplace.

Aims: There is a paucity of research regarding the effectiveness of bereavement counselling for Paediatric staff after critical incidents. The aim of this study was to survey healthcare workers who have been involved in recent Paediatric ward death at UHL in order to assess the requirement for and utilisation of bereavement services.

Methods: This study was a qualitative and quantitative evaluation using a structured survey of all the staff based on the Paediatric wards. Questions collected data regarding views and individuals' personal experience of bereavement counselling. We collected data over two weeks that pertained to 7 child deaths that had occurred over a six month period in 2015/2016. SPSS v23 was used for data analysis.

Results: There were 56 respondents. 43% of the sample population was <45 years old, 85.2% female, 89.1% Irish, 32.7% nurses and 20% were NCHDs. 21.8% reported not feeling supported following child death. 37% agreed that it impacts their ability to cope.11.3% wanted Bereavement Counselling within 2 days, 45.3% within 1 week and 43.4 % within one month. 19.6% of patients had attended bereavement counselling. 72.7% were satisfied with their experience. 40.5% were unaware of the service. Males reported to preferentially be facilitated by a hospital staff member and females an external facilitator (p=0.05).

Conclusion: Bereavement counselling services are highlighted as having an important role not only for parents but also for healthcare workers in the setting of child death. This study adds to the evidence base supporting this service in a local setting and identifies several improvements that could be made to enhance its utilisation.

PERSPECTIVES ON THE MANAGEMENT OF TYPE ONE DIABETES IN IRISH PRIMARY AND SECONDARY SCHOOLS

Danielle McCollum,[1] Olivia Mason,[2] Mary B Codd,[3] Michael J O'Grady[1]
[1] Department of Paediatrics, Midland Regional Hospital, Mullingar, Co. Westmeath
[2] CSTAR, University College Dublin, Belfield, Dublin 4
[3] School of Public Health, Physiotherapy & Population Science, University College Dublin, Belfield, Dublin 4

Aims
To establish the current management of Irish schoolchildren with type 1 diabetes (T1DM), the supports provided to them, the challenges they face and their personal experiences, in order to facilitate the implementation of a National Diabetes in Schools Programme.

Methods
Questionnaires were distributed through eight regional and tertiary paediatric diabetes services to children and adolescents with T1DM who attended either primary or secondary school. Data sought included patient demographics, treatment, education of school staff, assistance received and restrictions imposed. A free text box was also provided for children or their parents to relay any personal experiences or comments.

Results
A total of 821 questionnaires were completed (419 Primary, 402 Secondary). Among primary school children, 248(59%) were on injections, 121 (49%) of whom were on non-intensive insulin regimes. Among secondary school children, 274 (68%) were on injections, 215 (78%) of whom were on non-intensive insulin regimes. Access to a special needs assistant was reported in 217 (52%) and 40 (10%) of primary and secondary students with T1DM respectively. Written care plans were more prevalent in primary than secondary students [260 (62%) vs.104 (26%)]. Formal education of school staff was reported by 184 (44%) of primary school and 59 (15%) of secondary school students. Half of parents surveyed had been phoned by the school regarding the management of their child's diabetes. Thirty seven percent of parents had been phoned to attend to their child in school and 40% had been requested to collect their child early as a result of issues related to diabetes.

Conclusions
Our research has demonstrated deficits in care with respect to access to intensive insulin therapy, individualised care plans and restrictions imposed on schoolchildren with T1DM. These deficits need to be addressed as part of the implementation phase of the national paediatric diabetes model of care.

EFFECTIVENESS OF A PREDICTIVE ALGORITHM IN THE PREVENTION OF EXERCISE-INDUCED HYPOGLYCAEMIA IN TYPE 1 DIABETES

M B Abraham[1,2], R J Davey[2,3], **M J O'Grady[1,3]**, T T Ly[1-3], N Paramalingam[1,3], P A Fournier[4], A Roy[5], B Grosman[5], N Kurtz[5], J M Fairchild[6], B R King[7], G R Ambler[8], F Cameron[9], T W Jones, E A Davis
[1]Department of Endocrinology and Diabetes, Princess Margaret Hospital for Children, Perth, Australia
[2]School of Paediatrics and Child Health, The University of Western Australia, Perth, Australia
[3]Telethon Kids Institute, The University of Western Australia, Perth, Australia
[4]School of Sport Science, Exercise and Health, The University of Western Australia, Perth, Australia
[5]Medtronic MiniMed, Northridge, California, USA
[6]Department of Endocrinology and Diabetes, Women's and Children's Hospital, Adelaide, Australia
[7]Department of Endocrinology and Diabetes, John Hunter Children's Hospital, Newcastle, Australia
[8]Institute of Endocrinology and Diabetes, The Children's Hospital at Westmead, and The
[9]Department of Endocrinology and Diabetes, Royal Children's Hospital, Melbourne, Australia

Aims
Sensor-augmented pump therapy (SAPT) with a predictive algorithm to suspend insulin delivery has the potential to reduce hypoglycaemia, a known obstacle in improving physical activity in patients with type 1 diabetes. Predictive Low Glucose Management (PLGM) system employs a predictive algorithm which suspends basal insulin when hypoglycaemia is predicted. The aim of this study was to determine the efficacy of this algorithm in the prevention of exercise-induced hypoglycaemia under in-clinic conditions.

Methods
This was a randomized controlled cross-over study in which 25 participants performed two consecutive sessions of 30 minutes of moderate-intensity exercise (55% VO_2 peak) while on basal continuous subcutaneous insulin infusion on two study days; a control day with SAPT alone and an intervention day with SAPT and PLGM. The predictive algorithm suspended basal insulin when sensor glucose was predicted to be below the pre-set hypoglycaemic threshold within 30 minutes. We tested pre-set hypoglycaemic thresholds of 70 and 80mg/dl (3.9 and 4.4 mmol/L). The primary outcome was the requirement for hypoglycaemia treatment (symptomatic hypoglycaemia with plasma glucose <63mg/dl (3.5 mmol/L) or plasma glucose <50mg/dl (2.8 mmol/L)) and was compared in both control and intervention arms.

Results
Results were analysed in 19 participants. In the intervention arm with both thresholds, only six participants (32%) required treatment for hypoglycaemia compared to 17 participants (89%) in the control arm (p=0.003). In participants with 2-hour pump suspension on intervention days, the plasma glucose was 84±12mg/dl (4.7±0.7 mmol/L) and 99±24mg/dl (5.5±1.3 mmol/L) at thresholds of 70mg/dl and 80mg/dl (3.9 and 4.4 mmol/L) respectively.

Conclusions
SAPT with PLGM reduced the need for hypoglycaemia treatment following moderate-intensity exercise in an in-clinic setting.

THE ESTABLISHMENT OF A PAEDIATRIC MORBIDITY AND MORTALITY MEETING AT UNIVERSITY HOSPITAL LIMERICK

N. Bussmann, E. Ryan, E. Dunne, B. Linnane, A.M. Murphy, M.J. Mahony
Department of Paediatrics, University Hospital Limerick

Aims

Morbidity and mortality (M + M) meetings are an important strand of good clinical governance in centres committed to maintaining and improving the quality of patient care. Confidentiality and a "no blame" ethos are key principles when reviewing cases where shortcomings are identified. We present a review of a recently introduced M + M meeting in a busy regional paediatric centre. The meetings were designed to allow the structured presentation of complicated paediatric cases, in a multidisciplinary forum, to facilitate open discussion in order to identify areas of improvement.

Methods

From January 1st to July 1st 2016, two M + M meetings were held, both reviewing care in the preceding three month period. Mortality was defined as all cases of children who died under paediatric care. "Morbidity" included all children requiring transfer to a tertiary hospital. Medical charts, Emergency Department notes, and transfer letters were reviewed to ascertain the presentation, initial assessment, management, and mode of transfer. The tertiary centres were contacted to clarify the outcome for each case.

Results

There were 34 patients discussed in the first meeting, of which, 3 were deaths. Twelve patients were transferred by a doctor, 10 were transferred with a nurse and 9 were accompanied by parents. Fourteen patients transferred required surgical care and 17 required medical care. Of those transferred 8 were ventilated. In the second meeting 38 patients were discussed of which 4 were deaths. Ten patients were transferred with a doctor and 15 by a nurse. Parents accompanied 9 children. Twenty patients were surgical transfers and 14 were transferred under medical care. There were 5 ventilated patients.

Conclusions

We established a paediatric M + M meeting to review complicated cases and deaths.
Further auditing of the structure of this meeting may facilitate discussion on the "human factors" and/or systems failures, when these are identified.

GRAM NEGATIVE SEPSIS IN TERM AND PRETERM INFANTS: AETIOLOGIES AND CLINICAL OUTCOMES

DPM Moloney[1, 2], E Dempsey[1, 2], B Cryhan[3]
[1]Medicine and Health, University College Cork, Cork, Ireland
[2]Neonatalogy, Cork University Maternity Hospital, Cork, Ireland
[3]Microbiology, Cork University Hospital, Cork, Ireland

Background: Neonatal septicaemia is a source of extensive morbidity and mortality in NICUs worldwide(1,2,3).

***Aims*:** Evaluate the outcome and aetiology of every episodes of gram negative sepsis in the neonatal population of Cork University Hospital (CUH) over the past 8 years.

***Methods*:** This is a retrospective descriptive analysis. Neonates with blood cultures with gram negative growth were identified from microbiology database in CUH.

***Results*:** 50 babies with 51 episodes of GN sepsis were included in the study. The majority of sepsis occurred after the first 72 hours of life (41; 80.3%), i.e. late onset sepsis. Mean gestation was 29 weeks, 3 days and mean birth weight was 1357g. The majority of neonates in this group were <32 weeks i.e. Very premature (37; 74%). The incidence of gram negative sepsis was 5.1% for new-borns less than 32 weeks. The most common pathogen was *Escherichia coli* (34; 66%) followed by *Klebsiella spp.* (15; 29%). There were 2 instances of ESBL. Mortality was 10%.There was no difference in gestational age, birth weight or blood parameters (CRP, WCC and Platelets) between those who survived or died. Chorioamnionitis and sepsis occurring in the first 72 hours of life are associated with mortality (p=.018, p=.047). There was a wide variety in the adverse clinical outcomes in this cohort. 16 (32%) were diagnosed with IVH, 4 (8%) had a diagnosis of PVL, 16 (32%) had a diagnosis of NEC, 10 (20%) had a diagnosis of ROP and 15 (30%) had a diagnosis of BPD. A diagnosis of PVL was associated with a higher C-reactive protein on day 0 and day 7 of sepsis (p=.028 and p=.043). BPD and ROP were associated with a gestational age <28 weeks.

***Conclusion*:** *E.coli* remains the most common gram negative pathogen in the NICU and early onset disease is associated with significant risk of mortality.

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NEONATAL SEPSIS: A COMPARATIVE STUDY OF BLOOD & CEREBROSPINAL FLUID (CSF) CULTURE ISOLATES, INCLUDING ANTIMICROBIAL SUSCEPTIBILITY DATA AND ASSOCIATED PATIENT EPIDEMIOLOGY

A. Clavijo[1], S. Mc Dermott[2], M. O´Hanlon[2], S. Gormally[1]
[1]Dept. of Neonatology, Our Lady of Lourdes Hospital, Drogheda, Ireland
[2]Dept. of Microbiology, Our Lady of Lourdes Hospital, Drogheda, Ireland

Aims: (1) To document the incidence of sepsis/meningitis episodes in a regional Neonatal Intensive Care Unit (NICU). **(**2) To determine the causative bacteria, including antimicrobial susceptibilities and the associated patient epidemiology. (3) To compare these results with those of a similar cohort studied 11 years previously.

Methodology: All positive blood and CSF cultures taken from January 2013 to December 2015 (epoch 1) were identified using the hospital's microbiology surveillance systems. Demographic data was obtained on all patients, including gestation, age, birth weight and clinical outcome. These results were compared to a previous survey carried out between January 2002 and December 2004 (epoch 2). Sepsis was defined as a clinical syndrome of systemic illness accompanied by bacteraemia. Early onset sepsis (EOS) was defined as sepsis occurring within the first week of life with late onset sepsis (LOS) occurring thereafter.

Results: A total of 1304 blood cultures (BCs) and 147 CSF cultures were performed. No positive CSF cultures were identified. Forty-three BCs had positive growth, twenty-three of them were associated with clinical sepsis (61% EOS, 39% LOS), and twenty positive BCs were considered contaminated. The overall sepsis incidence was 2.27 per 1000 live births compared to 2.8 per 1000 live births for epoch 2. Mean gestation was 34+2 weeks (26-42). Thirty five per cent were term babies and 65% were preterm. The male:female ratio was 1.5. Mean birth weight 2.3 kg (0.8-4.7). Mean age 6 days (1-21). The main organisms identified in epoch 1 and 2 were: *Coagulase negative Staphylococci (CoNS)* 61%-64% respectively, *Escherichia coli* (*EC*) 13%-3%, *Streptococcus agalactiae* 13%-11%. Similar susceptibility profiles for both periods were observed for vancomycin (*CoNS),* penicillin (*GBS)* and cefotaxime/gentamicin (*EC)* and increase of CoNS resistant to flucloxacillin (33% to 100%).

Conclusion: The overall sepsis incidence decreased between the 2 study periods. CoNS remains as the most common organism isolated from BCs, observing an *E. Coli* increase. Remarkable change of CoNS resistant to flucloxacillin. Our current antibiotic policies are appropriate.

INTRAPARTUM UTERINE RUPTURE: CHANGING PATTERNS IN INFANT AND MATERNAL OUTCOME

AM O'Riordan[1], JF Murphy[1]
[1]Deptartment of Neonatology, The National Maternity Hospital, Dublin, Ireland

Background and Aims:
This study was mounted to examine the changing outcomes for babies and their mothers following a uterine rupture over a 70 year period.

Methods:
The study was undertaken at the National Maternity Hospital. The hospital prospectively collects detailed data on obstetric and neonatal outcomes in its annual clinical reports. Using this source we extracted all cases of uterine rupture and their subsequent clinical outcome. The data was collected for every year from 1940 to 2013. Mortality data following uterine rupture was available for all infants and mothers. Data on neonatal encephalopathy was available from 1970.

Results:
The total number of births in the study was 446 985. The total number of uterine rupture cases was 237 (0.5/1000 births).

Conclusion:
This large single institution series of 237 cases of uterine rupture over 7 decades has documented improved outcome for infants and their mothers. While death has become uncommon, the high neonatal encephalopathy (29%) rate underlines the serious nature of this obstetric complication.

CHECK ME BABY ONE MORE TIME!
AN AUDIT OF NEONATAL DISCHARGE CHECKS IN A TERTIARY PAEDIATRIC CENTRE

BD Power[1], A Foran[1]
[1]Dept. of Neonatology, Children's University Hospital, Temple Street, Dublin, Ireland

Aim:
To assess adherence by physicians to the NICE and RACP guidelines[1,2] with regard to the performance of a 'head-to-toe' baby check prior to discharge in a tertiary neonatology unit.

Methods:
This audit involved a retrospective review of medical charts of babies discharged from the Neonatology Service over a 6 week period (29/6/2015-9/8/2015). Following this, a validated Neonatal Examination Checklist was filed in all neonatal medical charts. Education sessions were provided for all staff working in the neonatology unit to assist the successful implementation of these checklists. A re-audit of babies discharged from the neonatology service over a 6 week period (5/10/2015- 15/11/2015) was completed. Data was analysed using descriptive statistics.

Results:
A total of 31 patients were included in the initial audit. 100% (n=100) of neonates had appropriate documentation of respiratory and gastro-intestinal examinations. heart sounds +/- murmurs were reported in 97% of neonates' (n=30). 77% (n=24) had documentation of the presence/absence of femoral pulses. 26% (n=8) of cases made reference to the presence/absence of a cleft palate. 3 patients' (10%) red reflexes were tested. Hip examination was noted in just one case. Half of all babies (51%, n=16) had documentation of a skin assessment. Primitive reflexes were recorded for 51% (n=16).
Neonates discharged over a 6 week period were re-audited following staff education and the implementation of a standardised examination checklist. 26 patients were included. The neonatal checklist was fully completed in 73% (n=19).

Conclusion:
The results of the initial audit highlighted that the assessment and documentation of red reflexes, palates and hips in particular were poor in our unit. The standardised checklist provides physicians with a comprehensive approach to clinical examination. Nevertheless, further education must be provided to medical, nursing and clerical staff to ensure continued and improved adherence to the international guidelines. This audit has undoubtedly improved clinical practice and quality of care for neonates in CUH, Temple Street.

1. NICE Clinical guideline No. 37: Postnatal care, Feb. 2015 2. Queensland Clinical guidelines:Routine Newborn Assessment, Oct. 2014

COMPLETED AUDIT CYCLE OF AT RISK HYPOGLYCAEMIC INFANTS IN POST NATAL WARD IN SLIGO UNIVERSITY HOSPITAL

CM Stephens, O Neylon, [1]Paediatrics, Sligo University Hospital, Sligo, Ireland

Hypoglycaemia is defined as blood sugar less than or equal to 2.6mmol/l, clinically presenting with jitteriness, apnea, cyanotic episodes, seizures and reduced feeding.(1) Hypoglycaemia can be a very prevalent and avoidable problem.

Aims:

1. To identify at risk infants over seven weeks.
2. To identify most prevalent risk factors.
3. To investigate if Royal College of Paediatricians of Ireland (RCPI) Guidelines are being followed. (1)
4. To re-educate staff regarding guidelines.
5. To re-audit a similar cohort of infants investigating if improvements have been made.

Methods:

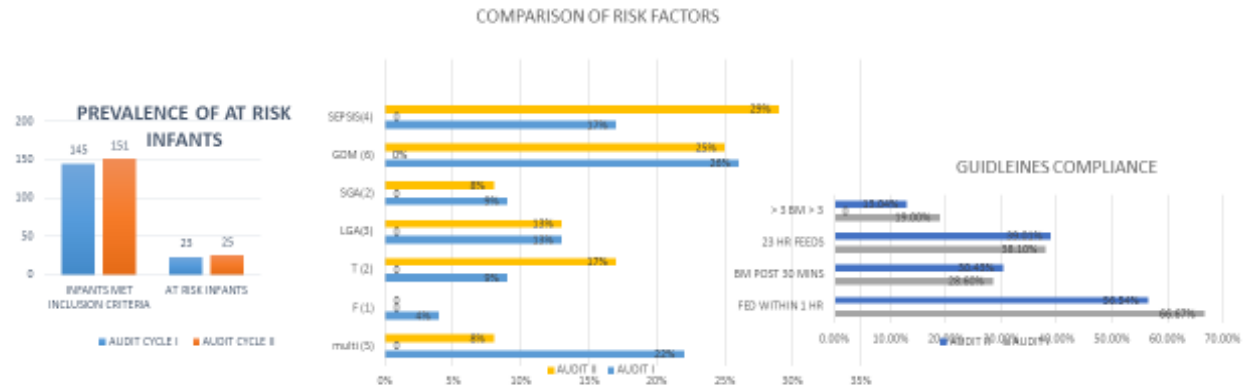
(RCPI) Guidelines for Hypoglycaemia in the Newborn were used as the standard in this prospective audit. (1) Information was collected from charts, verbal interview with mothers, computer databases and medical records.

Risk factors and Exclusions were as follows:

RISK FACTORS:	
SPECIFIC	NON SPECIFIC
INFANT OF DIABETIC MOTHER	SGA
HYPERINSULINISM	LBW
METABOLIC DISEASE	HYPOTHERMIA
HYPOPITUTARISM	INADEQUATE INTAKE
ADRENAL INSUFFIENCY	PREMATURITY <37 WEEKS
	SEPSIS
*LGA INCLUDED AS ADDITIONAL RISK FACTOR *	

EXCLUSION CRITERIA DUE TO AUTOMATIC NICU ADMISSION IN S.U.H.
PREMATURITY
LBW
INFANT OF DIABETIC MOTHER
4 MISSING CHARTS AUDIT CYCLE I
3 MISSING CHARTS AUDIT CYCLE II

Results:



Conclusions: There is a significant prevalence of at risk infants on the postnatal ward and guidelines are not optimally followed. Despite consultant led education improvements were not reported, Monitoring consecutive BMs and regular feeding are least abided to and regular feeding is not being carried out appropriately. All infants must be fed within one hour be it breast or formula. Mode of delivery should not affect timing either. Identification of a risk infants is an initial obstacle, leading to their mismanagement. To aid optimal care, birth weight must be plotted to identify SGA infants.
A checklist is to be placed in charts of identified infants and cleared documentation by NCHDs. Authors recommend a re-audit.

References: RCPI. Hypoglycaemia In The Newborn Guidelines

SAVE THE DATE? CORRECT RECORDING OF DAY OF LIFE AND CORRECTED GESTATIONAL AGE IN NICU

CM Moore[1], AF El-Khuffash[1]
[1]Neonatology, Rotunda Hospital, Dublin 1, Ireland

Background and Aims: Anecdotal reports from medical and nursing staff demonstrated anomalies in recording of neonates day of life (DOL) and corrected gestational age (CGA). Many decisions are made based on these ages – medications started and discontinued, vaccinations given and discharge continued. Mistakes can carry over and so correct and accurate recording of DOL and CGA is important. This audit aims to assess the accuracy of DOL and CGA recording.

Method: This was a retrospective observational audit. A convenience sample of ten medical records of premature babies was use - selected as DOL and CGA are most relevant in these babies. A proforma was created to collect the recorded DOL and CGA and the date from the chart. Only anonymous data was collected. Data was analysed in Microsoft excel. The standard is 100% accuracy.

Results: There were ten infant charts reviewed as part of the audit. There were a total of 531 bed days in total analysed (mean per patient of 53, median 48, range 31-99). All patient charts had some errors. No charts were completely accurate.

DOL: The highest error was 3 days greater than accurate day of life.

CGA: The highest error was 11 days less than accurate corrected gestational age. The median and mode of the error was zero days, with the mean error 0.32 days less than the accurate corrected gestational age.

Conclusion: No charts were completely correct. As medical records are a legal document this is unacceptable and steps to improve this will be taken.

LATE-ONSET NEONATAL SEPSIS: AN AUDIT OF CLINICAL PRACTICE INCLUDING ANTIMICROBIAL STEWARDSHIP

CE Reynolds[1], A Delaney[2], EM Dempsey[3]
[1]Neonatology, Cork University Maternity Hospital, Cork, Ireland
[2]Pharmacy, Cork University Maternity Hospital, Cork, Ireland
[3]Neonatology, Cork University Maternity Hospital, Cork, Ireland

Aims:
Late-onset neonatal sepsis (LONS) is a significant cause of morbidity and mortality in very low birthweight (VLBW<1.5kg) and preterm babies.
The aim of this audit was to:

1. Determine the number of babies <32 weeks gestation and/or birthweight <1.5kg who were screened for suspected LONS between January-July 2015.
2. Determine incidence of LONS
3. Identify common organisms in LONS
4. Review antimicrobial practices

Methodology:
The design was a retrospective study. A chart review of babies meeting the inclusion criteria was performed. Data was analysed using SPSS. Sample population: n=45

Results:
Between January and July 2015, 45 babies <32 weeks and/or <1.5kg were admitted to the neonatal unit. 20 were screened at least once for late-onset neonatal sepsis during this time period. In total, 42 sepsis evaluations were performed. The main reason for screening was recurrent apnoea/desaturations/bradycardia (22 cases; 52.3%) followed by pyrexia (6 cases; 14.3%). The median day of first evaluation was Day 8.5. The median number of evaluations per baby was 1.5. There was a total of 12 confirmed sepsis episodes in 8 of the babies screened. Coagulase-negative staphylococci (CoNS) was the predominant organism detected (4 cases), followed by E.coli, S.aureus and Enterococcous faecalis(1 case identified). In 5 cases, there was no growth on blood cultures. 88% of suspected cases were treated empirically with Teicoplanin and Gentamicin.

Conclusion:
44% of all babies <32 weeks gestation and/or birthweight<1.5kg were screened for suspected sepsis, with proven sepsis occurring in 18% of all infants. The most common organism was CoNS. We found our current antimicrobial therapy was in keeping with unit guidelines.

THE IMPACT OF A HYPERDYNAMIC LEFT VENTRICLE ON RIGHT VENTRICULAR FUNCTION MEASUREMENTS IN PRETERM INFANTS WITH A PATENT DUCTUS ARTERIOSUS

CR Breatnach[1], O Franklin[2], A James[1], N Mccallion[1], A El-Khuffash[1]
[1]Rotunda Hospital, Neonatalogy, Dublin, [2]Crumlin Hospital, Paediatric, Dublin, Ireland

Background and aims: Several new modalities are emerging for RV assessment including tissue-Doppler measured longitudinal strain (RV LS), RV systolic tissue Doppler velocity (RV s`), tricuspid annular plane systolic excursion (TAPSE) and RV fractional area change (FAC). A hyperdynamic LV can increase RV measures of displacement (TAPSE) and velocity (RV s`) but not measures of relative change of length (RV LS) or area (FAC). We aimed to explore this hypothesis in preterm infants with a PDA.
Methods: We measured LV function [ejection fraction (LV EF); left ventricular output (LVO)], and RV function [RV LS; RV s`; TAPSE; FAC] on Days 1, 2 and 5–7 in infants <29 weeks. The cohort was divided based on PDA presence by Day 5–7. LV and RV function measurements were compared between the groups using two way ANOVA with repeated measures.
Results: 121 infants with a mean (SD) gestation and birthweight of 26.8 (1.4) weeks and 968 (250) grams were enrolled. By Day 5–7, the PDA remained open in 83 (69%) , with evidence of hyperdynamic LV function (**Table 1)**. There was no difference in RV s` or TAPSE but infants in the PDA Group had lower FAC and RV LS (**Figure 1**). On linear regression analysis, the presence of a PDA was independently associated with lower RV BLS (p=0.03) and lower RV FAC (p<0.01) when adjusting for gestation.
Conclusions: LV influence on RV functional parameters must be taken into account when interpreting measurements. A hyperdynamic LV can increase TAPSE and RV s` without a true increase in RV function.

Table 1: Clinical and echocardiography parameters of Left ventricular overload in the two groups on Day 5 - 7.

	PDA (n=83)	No PDA (n=38)	p
PDA Diameter (mm)	2.7 [2.2 – 3.2]	0	NA
Left Atrial to Aortic Root Ratio	1.6 (0.4)	1.3 (0.2)	<0.01
LV End Diastolic Diameter (mm)	13 (2)	11 (1)	<0.01
Ejection Fraction (%)	64 (8)	60 (7)	<0.01
Left Ventricular output (ml/kg/min)	260 (86)	178 (49)	<0.01

Data are presented as means (standard deviation). Oxygen is presented as median [Range].

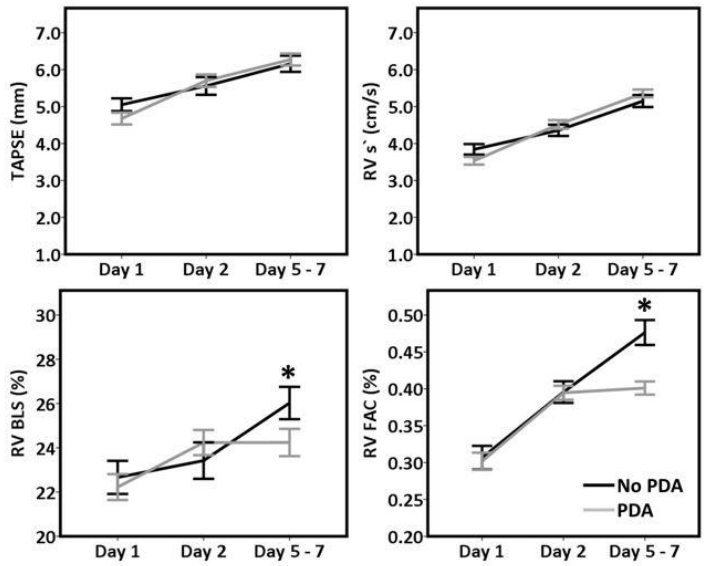


Figure 1: RV function measurement in the two groups over the first week of age. Infants with a PDA (Grey Line) had lower RV BLS and RV FAC on Days 5 – 7. (* = p<0.05, two way ANOVA with repeated measures

A RANDOMISED CONTROLLED TRIAL OF QUANTITATIVE VERSUS QUALITATIVE END-TIDAL CO_2 DETECTION DURING FACEMASK VENTILATION OF PRETERM INFANTS IN THE DELIVERY ROOM

GA Hawkes[1], **D Finn[1]**, M Kenosi[1], V Livingstone[1], GB Boylan[1], CA Ryan[1], EM Dempsey[1]
[1]INFANT Resaerch Centre, University College Cork, Cork University Maternity Hospital, Cork

Aim

End tidal CO_2 ($EtCO_2$) detection may be a useful method of confirming effective non-invasive face mask ventilation during stabilisation of preterm infants. The objective of this study was to compare qualitative versus quantitative methods of $EtCO_2$ detection during facemask ventilation of preterm infants (<32 weeks) in the delivery room (DR).

Methods

Preterm infants less than 32 weeks were randomly assigned to the use of either a disposable PediCap $EtCO_2$ detector (qualitative) or a Microstream side stream capnography device (quantitative) for facemask ventilation in the DR. The primary outcome was partial pressure of CO_2 ($PaCO_2$) readings obtained in the NICU, within an hour of birth. Normocapnia was defined as a $PaCO_2$ measure between 5-8kPa. Secondary outcomes included need for intubation, duration of intubation, duration of continuous positive airway pressure and incidence of bronchopulmonary dysplasia.

Results

There were 59 infants included. Of all infants, 59% (35/59) were within the $PaCO_2$ target range. There was no difference in the primary outcome, 64% (21/33) of infants in the quantitative group within the $PaCO_2$ range compared to 54% (14/26) in the qualitative group (p=0.594).93% of participants <28 weeks' gestation were within the $PaCO_2$ range**.** There was no difference in the intubation rate, days of ventilation or bronchopulmonary dysplasia rates between both end tidal groups.

Conclusion

Whilst there was no difference in the incidence of normocapnia between both methods, the use of either form of $EtCO_2$ during newborn stabilisation should be considered, especially in infants less than 28 weeks' gestation.

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NEONATAL BACTERAEMIA AMONG 112,360 LIVE BIRTHS

D Huggard, R Drew, N McCallion
[1]Neonatology, Rotunda Hospital, Dublin, Ireland

Aims:
The primary aim was to determine the incidence of bacteraemia in a cohort of neonatal patients over a 14 year period in a tertiary neonatal unit. Secondly, to describe the organisms involved, and also to establish the rates of sepsis per 1000 live births and per 1000 deliveries with regard to both early onset sepsis (EOS) and late onset sepsis (LOS). Finally this study aimed to investigate the trends of neonatal sepsis, and to determine whether changes in clinical practice influenced the rate of blood culture positivity.

Methods:
This was a retrospective review of the incidence of bacteraemia. Data was obtained from computerised hospital laboratory records. EOS was defined as culture positivity within the first 7 days of life, and LOS was bacteraemia after 7 days of life.

Results:
With regards to EOS, GBS was the predominant pathogen, followed by *E.coli*, CoNS, and *S. aureus*. The overall mean EO rate per 1000 live births (LBs) over the study period was 1.19. The mean EO rate per 1000 LBs due to GBS alone was 0.46. Looking at LOS, *S.aureus*, CoNS , *Enterococcus spp. E.coli*, *Klebsiella spp,* and GBS were the most common bacteria cultured. The mean LOS rate over 14 years was 1.88 per 1000 live births.

Conclusions:
The overall rate of EOS remained fairly steady. GBS remains the major pathogen in EOS; however its incidence has remained largely unchanged over time in relation to both EOS and LOS. Conversely the rate of LOS peaked from ’05-’09, mainly due to an increase in *Staphylococcus aureus*, CoNS and *Enterococcus spp.* cases, and then improved dramatically in the following years. This was likely due to a change in hospital policies in relation to hand hygiene and intravenous line placement and maintenance.

FOLLOW-UP OF PATIENTS WITH CONGENITAL DIAPHRAGMATIC HERNIA

S Tabassum[1], S Tamgumus[1], J L Wong[1], R Keogh[1], J Dunne[1], M Healy[2], S Paran[3], J Kelleher[1,2], EJ Molloy[1,4,5]
[1]Department of Neonatology, Our lady's Children's Hospital OLCHC
[2]Department Of Paediatric Intensive Care Unit and Critical care, Our lady's Children's Hospital OLCHC
[3]Department Of Paediatric Surgery, Our lady's Children's Hospital OLCHC
[4]Coombe Womens and Infants University Hospital, Dublin 8
[5]Paediatrics,Trinity College, the University of Dublin, Ireland.

AIM:
We aimed to examine multi-disciplinary follow-up for the patients admitted with Congenital Diaphragmatic Hernia (CDH) to Our Lady's Children's Hospital where surgical care for CDH is centralised.

METHODS:
This retrospective cohort of admissions to OLCHC during 2014 was assessed for demographic details, common associated morbidities and compliance to the CDH follow-up as per the American Academy of Paediatrics (AAP) guidelines

RESULTS:
In total 26 infants with CDH were referred to OLCHC ICU and 5 babies subsequently died. Their mean (SD) gestation was 38(2) weeks and birth weight 3.1(0.7)kg with 9 male infants. The following were also noted: antenatal diagnosis (n=15[72%]); left-sided defect (n=20[95%]; primary surgical repair (n=15[71.4%]).In all infants with CDH Neonatology/PICU/Surgery/Dietetics were involved and also the following: Cardiology (n=18[85%]); Pulmonology (n=11[52%]); Speech and language therapy (n=13[61%]). Their comorbidities included: cardiac (n=19[90 %]), gasto-esophageal reflux disease GORD (n=10[47%]), aspiration pneumonia requiring PEG insertion and fundoplication (n=1[4.5%]); orchidpexy (n=2[9%]).The Neonatology team followed the majority of infnats (n=9[42%]) in OLCHC OPD with local referral (n=10[47.6%) of most of the remainder and no documented post-discharge follow-up in two infants(n=2[9.5%]). The following reviews were also documented but does not acocunt for local specialty referrals: Cardiology team follow-up (n=18[85%]); Surgical team followed (n=15[72%]) in 2-3months and Respiratory teams reviews (n=10[47%]). Six infants required further intervention including laparotomy for adhesiolysis in one.

CONCLUSION:
Structured multidisciplinary follow-up is recommended to facilitate early recognition and treatment of the complications in CDH.Further development of current follow-up would be useful as it is currently complicated by infants returning for follow-up to their local hospitals and no national followup guidelines. In additon European followup guidelines are in development. A structured multidisciplinary followup plan with parental input may be beneficial in infants with CDH.

BILIOUS VOMITING IN THE TERM NEONATE

EC Ruth[1], JDR Corcoran[1]
[1]Department of Paedatrics, Rotunda Hospital, Parnell Square, Dublin 1, Ireland

Background: Bilious vomiting in the term neonate is considered a surgical emergency, however not all cases of bilious vomiting are caused by intestinal obstruction. Rotational anomalies are estimated to occur in 1 in 500 live births[1], with volvulus in 1 in 6000 live births[2]. Standard care currently includes an upper gastrointestional (GI) contrast study. This, however, carries a high radiation dose, equivalent to approximately 50 chest x-rays.

Aims: With this study we wished to establish the number of term babies in our centre who had an upper GI contrast study carried out for bilious vomits over a 5 year period. We wished to outline the demographic details, presenting signs and symptoms and abdominal xray results, and to determine the number of babies with serious underlying surgical pathology.

Methods: All babies presenting from the postnatal ward to the SCBU/NICU with bilious vomiting from January 2011 to December 2015 were identified. Inborn babies over 35 weeks gestation who presented with bile stained vomiting as the primary complaint were included. A chart review identified gender, gestation, delivery details, mode of feeding, age at presentation and clinical examination findings. Primary outcome was defined as malrotation on upper GI contrast study. Abdominal x-ray and upper GI contrast study reports were obtained from radiology databases PACS and Synapse.

Results: Over the 5 year study period, 124 term babies with bilious vomiting were identified. Of these, 5 had an abnormal barium study showing malrotation, all of these babies were female. The median age at first bilious vomit was 22 hours (interquartile range (IQR) 14.5 – 38). Median time to barium study from presentation was 4 hours (IQR 2-8). Univarate analysis with chi square test showed no significant difference in age at presentation, number of vomits, previous non bilious vomiting, abdominal distension/tenderness or PFA result.

Conclusion: In our study group, all babies with malrotation were female, this was statistically significant. There was no significant difference in details of presentation, examination findings or PFA result between those with and without malrotation. While rare, volvulus needs to be outruled in cases of bilious vomiting and clinical correlation cannot exclude the need for an upper GI contrast study.

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AUDIT OF PROPHYLACTIC IRON PRESCRIBING IN PRETERM INFANTS

HA Deeny[1], P Duffy[2], P O'Connor[1]
[1]Neonatology, Coombe Women's and Infants Univeristy Hospital, Dublin, Ireland
[2]Pharmacy , Coombe Women's and Infants University Hospital, Dublin, Ireland

Aims: An audit of prophylactic iron prescribing in the preterm infants of a tertiary neonatal centre.

Methods: Using the standard local guidelines, all infants qualifying for prophylactic iron were identified from electronic record search of hospital data. The current hospital guideline states "*all infants born less than or equal to 34 week gestation to commence at 2 weeks of age if on more than 100 ml/kg/day enteral feeds. Therapy to continue to 6-9 months of age*".
All infants qualifying from May 2015 – October 2015 were included and medical records reviewed using a proforma. Data included gestation, weight, dose/kg on initiation, discharge and at six weeks. The type of feed at each interval was recorded as expressed breast milk (EBM), donor EBM, artificial formula (AF) or preterm artificial formula (PTAF).

Results: 92 infants qualified from the data search (9 records excluded due to neonatal death, transfer or not initiating iron). Initiation of iron varied from day of life 13 -16 with 70% compliance with standards. Initial dose varied from 2mg/kg – 7mg/kg. Those <28 weeks all had doses >2mg/kg. Dose on discharge varied from 1.7- 4.7mg/kg and at 6 weeks from 0.9 – 2.7mg/kg. Advice on duration of therapy varied from 6 months to 12 months. Those on EBM/BF at 6 weeks corrected age showed average doses were below treatment guidelines.

Conclusions:

- Over dosing was identified in the extreme preterm <28 weeks.
- Initiation of iron therapy showed good compliance and the variation in dosing decreased with increasing gestation.
- Those on BF/EBM at 6 weeks were under-dosing according to guidelines.
- Recommendations;
    - Using dose/kg rather than gestation brackets
    - Guidelines adjusted according to the most recent evidence recommending 2mg/kg/dose[1,2].
    - Review of dose/kg at discharge and 6 week review according to changes in feed type.
    - Written advice to parents on duration of treatment.

[1] Berglund S, Westrup B, Domellof M. Iron Supplements Reduce the Risk of Iron Deficiency Anemia in Marginally Low Birth Weight Infants. Pediatrics 2010; Oct 126 (4) [2]Domellöf M. Iron requirements, absorption and metabolism in infancy and childhood. Curr Opin Clin Nutr Metab Care 2007; 10: 329–335

NQUIP – A NICU Quality Improvement Programme

K Tanney, A O'Doherty, S Nedungadi
[1]Newborn Intensive Care Unit, St. Mary's Hospital, Central Manchester Foundation Trust, Manchester, UK

Aims: Central Manchester Foundation Trust embodies efficiency, safety and quality of care. Our core focus is on providing the best experience we can for sick patients and their families.

Methods: With a climate of continual improvement, in September 2015 this tertiary NICU embarked on the NQUIP initiative, complementing and enhancing how we care for our babies. Based on feedback from present and past families and staff at all levels, five workstream teams were created to bring about improvements in areas of Administration, Patient / Parent Experience, Inreach and Outreach Services, Patient Pathways and Interface with Maternity. The NQUIP project is led by a senior matron whose full-time post is dedicated to this role, a Consultant Programme Lead and a designated Programme Manager. Workstream teams consist of two consultant representatives, senior nurses, admin staff, junior medical, nursing and midwife representatives where relevant.

Results: Workstreams meet fortnightly to pinpoint areas for change, plan for streamlining pathways and feed back on progress and audit results. Several projects have been successfully executed since the commencement of NQUIP, receiving overwhelmingly positive feedback from all involved and affected. Specific improvements have been made in the areas of: facilitating parental involvement and kangaroo care, enhancing parent information and electronic resources, creation of staff-parent forums and NICU social events, fundraising, parent-baby bonding, and parent-staff communication.

Conclusion: Through the NQUIP initiative, this NICU shows dedication to improving the treatment we provide for sick babies and their families, and demonstrates our commitment to providing a safe and efficient high quality of care.

N/A

POST-NATAL CORTICOSTEROID USE FOR PREVENTING CHRONIC LUNG DISEASE IN A TERTIARY CARE NEONATAL UNIT

LM O'Callaghan[1], LAF O'Connell[2]
[1]Department of Medicine, University Hospital Limerick, Limerick, Ireland
[2]Department of Neonatology, Cork University Maternity Hospital, Cork, Ireland

Aims
Postnatal corticosteroids have long been used to prevent and treat chronic lung disease in preterm infants. However, adverse neurological outcomes including cerebral palsy have led to concerns about their safety and use[1]. Current opinion suggests a role for cautious corticosteroid use in older, ventilator-dependent infants[2]. The primary aim of this study was to examine the use of postnatal corticosteroids in Cork University Maternity Hospital (CUMH) between the years of 2008 and 2014, determine has their usage increased and describe typical prescribing habits.
Method
A retrospective review of very low birth weight infants was completed. All infants treated with dexamethasone in CUMH from 2008 to 2014 were identified from the Vermont Oxford Network Database. Clinical data was collected from patient notes and compiled for analysis.
Results
15 infants received dexamethasone. From 2008-2011 only one infant received steroid treatment, while from 2012-2014 steroids were used in 14 cases. The median age at first steroid dose was 23 days (IQR 20-25). All infants were ventilated when steroids were initially commenced. 13 were prescribed dexamethasone according to a defined protocol. 14 (n=93.3%) infants completed their treatment course, with 7 (n=46.7%)remaining off ventilation post cessation of dexamethasone. Four required a repeat course of dexamethasone. Cumulative dose of dexamethasone was within recommended daily limit of 0.2mg/kg/day in 94.7% of the dosing regimens. This is in accordance with DART protocol. Parental discussion was documented in 14 of 15 cases (93.3%).
Conclusion
Postnatal corticosteroid use has increased between 2008 and 2014. This rise in use was accompanied by implementation of a specific guideline in CUMH. No patient was less than 14 days old on commencing steroids, daily dosing was kept within recommended limits, and parental discussion was documented in the majority of cases[3]. Dexamethasone usage in CUMH was in keeping with recommended practice throughout the study period.

1. Yeh TF, Lin YJ, Huang CC, Chen YJ, Lin CH, Lin HC, et al. Early dexamethasone therapy in preterm infants: a follow-up study. Pediatrics. 1998;101(5):E7 2. Doyle LD, PG; Morley, CJ; McPhee, A; Carlin, JB. . Outcome at 2 Years of Age of Infants From the DART Study: A Multicenter, International, Randomized, Controlled Trial of Low-Dose Dexamethasone. Pediatrics. 2007;199(4):716-21. 3. Halliday HL, Ehrenkranz RA, Doyle LW. Late (>7 days) postnatal corticosteroids for chronic lung disease in preterm infants. The Cochrane database of systematic reviews. 2009(1):Cd001145.

THE IMPACT OF DONOR BREAST MILK USE ON THE NEONATAL UNIT

Anne Murray[1,2], Anne Marie Brennan[3] Brendan Murphy[3], Anne Doolan[4]

[1]University College Cork [2]Department of Surgery, Cork University Hospital [3]Department of Neonatology, Cork University Maternity Hospital [4]Department of Neonatology, Limerick Regional Maternity Hospital

Aims: In very low birth weight, preterm infants, receipt of human milk is associated with a reduced risk of necrotising enterocolitis. Early introduction of enteral feeds (EFs) is associated with a lower incidence of sepsis. In Cork University Maternity Hospital (CUMH), the aim is to start enteral feeds on day 1 of life (DOL1). Donor expressed breast milk (DEBM) has been in use in CUMH since December 2012. There is concern that using DEBM could negatively impact on receipt of maternally expressed breast milk (MEBM) by the infant. There has been no review of its impact on the neonatal unit to date. The aims of this research were to evaluate whether EFs are started on DOL1, to determine the impact of the introduction of DEBM on the age of first enteral feed and the time taken to reach full EF (150mg/kg/day). We also aimed to elicit if the availability of DEBM has impacted on the use of MEBM.

Methods: Data was collected from the charts of infants born in CUMH <1500g birthweight and/or <32 weeks gestation between January and December 2014. After exclusion criteria were applied, a sample study of 55 infants remained. Outcomes were compared to that of a pre-DEBM group (Brennan et al., 2011).

Results: The results are summarised in *figure 1* and *tables 1 and 2*. A p value of <0.05 was deemed significant.

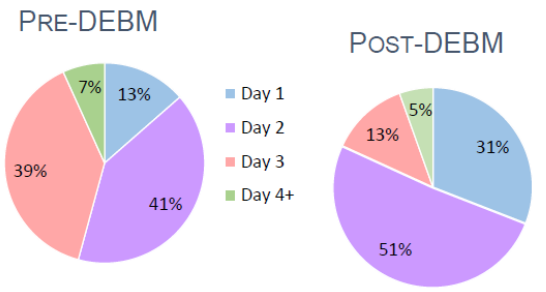

Figure 1. Distribution of age of first enteral feed in pre-DEBM vs post-DEBM groups

Table 1. Feeding outcomes

Variable (days)	Pre-DEBM (n=59)	Post-DEBM (n=55)	P value
Age first enteral feed[a]	2 (2-3)	2 (1-2)	0.002
Time to full feeds[a]	12 (10-16)	11 (8-14)	0.048
Duration of parenteral nutrition[a]	10 (8- 3)	9 (7-13)	0.323

[a]Median (IQR)

Table 2. MEBM usage in hospital following supplemental first enteral feed

Type of first feed	Received MEBM	Did not receive MEBM	P value
DEBM (n=10) n, %	8 (80)	2 (20)	0.00
Formula (n=4) n, %	1 (25)	3 (75)	

Conclusion

Since the introduction of DEBM, the number of infants receiving their first enteral feed on DOL 1 has increased. However, this is still considerably below target, at only 31%. Infants supplemented with DEBM rather than formula were significantly more likely to subsequently receive MEBM.

APPROPRIATENESS OF ADMISSION OF JAUNDICED BABIES TO A REGIONAL NICU.

Nahla Ahmed; Qasim Mahmood; Deirdre O'Connell; Con Sreenan
Department of Neonatology, University Maternity Hospital Limerick, Ireland

Introduction

Neonatal jaundice is one of the most common conditions needing medical attention in newborn babies in postnatal ward. Approximately 60% of term and 80% of preterm babies develop jaundice in the first week of life.

Purpose

Our aim to examine the appropriateness of admission for phototherapy, To identify variables of appropriateness of admission and to make recommendations.

Materials and Methods

A retrospective and prospective case review of all babies >35 weeks admitted to our neonatal unit from December 2014 to March 2015. The following data was obtained, gestational age, postnatal age, type of feeding, mode of delivery, coomb's test, level of hyperbilirubinemia, risk factors and duration of admission. Maternal charts were reviewed for jaundice onset and intervention.
Risk factor group included preterm (gestation < 37 weeks), DCT positive jaundice, suspected sepsis and serum bilirubin > 50 µmmol above the threshold for phototherapy.

Results

A total of 61 babies were reviewed in the study period, 48(79%) term, 13(21%) preterm. Most of the babies (43%) were exclusive breast feeding followed by 34% combined feeding and 23% who were bottle fed. Rhesus isoimmunization; 80% DCT -ve and 20% DCT +ve. 43% of the babies were admitted to NICU on day 3 of life followed by 36% on day 2. The duration of admission was 3 days for 25 (41%) babies, 2 days for 23(38%), > 3 days in 9 (15%) and 1 day in 4(6%) of the cases. The high risk group comprised 31 babies (51%) including 12 preterm babies, DCT positive cases, 4 babies with serum bilirubin > 50µmmol above the threshold for phototherapy and 2 babies with suspected sepsis . 30 babies (49%) were deemed low risk, 22(73%) of them were breast fed .

Conclusion

This study showed 49% of admission for phototherapy was inappropriate . Provision of phototherapy on the post-natal ward will improve the patient quality of care, reduce admission costs and bed pressure.

A PROSPECTIVE STUDY ON BABY CLINIC PRESENTATIONS TO THE NATIONAL MATERNITY HOSPITAL, HOLLES ST, OVER A SEVEN WEEK PERIOD

S Fitzgerald[1], S Richardson[1,2], A Curley[1,3]
[1]The Neonatal department, The National Maternity Hospital, Holles Street, Dublin 2

Aims

To determine referral routes, diagnoses and outcome.To assess prospectively what percentage of babies could have been seen by a clinical nurse specialist. To assess number of attendances and whether service could be made more efficient. To assess number of infants where care required escalation to a more senior doctor and how many infants required admission/transfer to another unit

Methodology

Prospective data collection in clinic using a proforma over a seven week period from 11/04/16 to 30/05/16. Variables included day of attendance, gestation at birth, birth weight, presenting weight, referrer, ethnicity, mode of feeding, presenting complaint and outcome. Data was analysed using SPSS version 22.

Results

187 babies attended clinic during this period. Median number of attendances was 1. 76% of babies attended only once. 68% of babies seen in clinic had never been admitted to the neonatal unit. GPs and public health nurses were responsible for one third of all referrals. 74% of cases referred by the PHN were non urgent reviews and 87% of GP referrals were also considered non urgent. GPs referred 90% of the cases for hip assessment and ultrasound. All ten cases were referred for asymmetrical creases. Only one case referred by a GP was admitted to the NICU.

Conclusion

Our results suggest that children are attending the clinic beyond neonatal age and being referred with non-urgent conditions that may be more appropriately dealt with elsewhere. Almost 30% of referrals by GPs were for hip ultrasound. All ten cases were referred for assessment of asymmetrical skin creases despite there being no evidence that this is an indication for U/S. We conclude that we could reduce referrals from GPs by introducing an education package for GPs and PHNs regarding correct examination technique of hips, risk factors for DDH and indications for ultrasound.

AN AUDIT OF THE CARE RECEIVED BY PARENTS WHO HAVE SUFFERED LATE MISCARRIAGE, STILLBIRTH OR NEONATAL LOSS IN CAVAN GENERAL HOSPITAL OVER 3 YEARS

Rosina Mc Govern[1], **Michaela Pentony[1]**, Louise Dempsey[1], Paul Gaffney[2], Alan Finan[1]

1) Cavan Monaghan Hospital Paediatric and Maternity Service
2) Assessment, Consultation & Therapy Service Organisation: TUSLA

Background: Cavan Monaghan Hospital maternity service has not previously examined experiences of the care provided to bereaved parents. Prior to the audit recruitment of a full-time bereavement Clinical Nurse Specialist was underway. The HSE have produced a draft document 'Standards for Bereavement Care following Pregnancy Loss and Perinatal Death' in June 2015.[1] A questionnaire based report; 'Listening to parents after stillbirth or the death of their baby after birth' was published by the National Perinatal Epidemiology Unit, University of Oxford 2014.[2]

Aim: To assess parental experience of all aspects of bereavement support prior to the appointment of full time Bereavement Clinical Nurse Specialist and compare with standards in HSE draft document 'Standards for Bereavement Care following Pregnancy Loss and Perinatal Death'.
Method: Parents who have experienced late miscarriage, stillbirth or neonatal loss in the years 2012, 2013 and 2014 were invited to participate. An extensive semi-structured questionnaire was sent to all those parents who gave consent. Quantitative data was recorded and qualitative data were themed according to comments written in free text boxes.

Results: Thirty one questionnaires were sent to parents. Sixteen (52%) completed questionnaires were returned. 88% parents felt they were told of their loss in a sensitive and respectful way. 81% of parents felt both doctors and midwives explained the plan of care. Key themes were: appropriate accommodation, post-mortem examination, consultant follow up, follow-up counselling and bereavement specialist support.

Conclusion: The numbers are small in this study but they provide us with a valuable insight into the service we provide for our bereaved parents. Overall we are meeting several standards at a high level however there are areas that need improvement.

1) Health Service Excutive(2015) Standards for bereavement care following pregnancy loss and perinatal death: draft document v. 1.8.

2) Redshaw, M, Rowe, R, and Henderson, J.(2014) Listening to parents: after stillbirth or the death of their baby after birth. Policy Research Unit in Maternal Health and Care, National Perinatal Epidemiology Unit, Oxford;

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Poster No.1

EFFICACY OF INFLIXIMAB AS RESCUE THERAPY IN PAEDIATRIC ACUTE SEVERE ULCERATIVE COLITIS – A RETROSPECTIVE REVIEW.

AO Akintimehin[1], T Raftery[2], M Hamzawi [2], K O'Driscoll[2], S Kiernan[2], S Quinn[2], AM Broderick[2], B Bourke[2], S Hussey[2]

[1]UCD School of Medicine and Medical Science, UCD, Dublin, Ireland

[2]Gastroenterology, Hepatology and Nutrition Unit, Our Lady's Children's Hospital, Crumlin, Dublin, Ireland

AIMS: Paediatric Acute Severe Ulcerative Colitis (ASC) is an emergent condition requiring Intravenous Corticosteroids as first-line treatment. Prior to the introduction of second-line treatments, surgery was a common outcome in refractory disease. Since 2011, Infliximab (IFX) has been recommended as second-line treatment in steroid refractory disease, however very little data is available on its long term efficacy in maintaining remission and preventing surgery in this cohort. This study evaluated the outcomes of IFX use in paediatric ASC in Our Lady's Children's Hospital, Crumlin (OLHC).

METHODS: A retrospective chart review of all patients between 31 December 2008 - 31 December 2015 with ASC who required either a colectomy or IFX was conducted. An episode of ASC was defined as a Paediatric Ulcerative Colitis Activity Index (PUCAI) ≥65[1]. The diagnosis of Ulcerative Colitis (UC) was established according to standard clinical, radiological, endoscopic and histological criteria. Clinical and laboratory data were recorded at admission, day 3, day 5 and up to maximal follow-up. The rates of IFX, colectomy and second-line therapies were also assessed.

RESULTS: 37 cases of ASC were identified, comprising of 12 males and 25 females with mean ages of 10.7 (4.2) and 11.6 (3.4) years (NS). For 73% (n=27) it was their first presentation of ASC. 10 (27%) were steroid responsive and 27 (73%) were steroid refractory and received IFX (n=21) or a colectomy (n=6). Of the IFX group, 13 (62%) achieved remission with 3 successfully weaned off, 6 (29%) required a colectomy and 2 (10%) were not in remission as at maximal follow up. Of the steroid responsive group, 3 (30%) required a colectomy.

CONCLUSION: 15/21 (71%) of the steroid refractory group who were given IFX had avoided a colectomy as at maximal follow up. Further work is required to explore the optimal use of IFX in paediatric ASC.

1 Levine A, de Brie CI, Turner D, et al. Atypical disease phenotypes in paediatric ulcerative colitis: 5 year analyses of the EUROKIDS registry. Inflammatory Bowel Diseases 2013; 19:370-7.

SAFETY OF OUTPATIENT TONSILLECTOMY IN CHILDREN: A REVIEW OF 1 YEARS IN A OUR LADY OF LOURDES HOSPITAL EXPERIENCE.

S Al Hanini[1], H Rowley[2], S Gormally[1]
[1]Paediatrics , Our Lady of Lourdes Hospital, Drogheda, Ireland
[2]ENT, Children's university Hospital, Dublin, Ireland

Aims

1. To document the demographic features of unexpected presentation of post-tonsillectomy paediatric patients to ED in OLOLH over a 12-month period,
2. To describe the presenting complaints and treatment required

Method

All patients, presenting to a Paediatric ED in OLOLH from 1/8/2014 to 1/9/2015 with post-tonsillectomy bleeding were included in the study. Information documented included time of presentation, attendance method, indication for tonsillectomy, place of surgery, presenting complaint in ED clinical status, treatment required and outcome

Results

From 1/8/2014 to 1/9/2015, fifteen patients presented to PED with post-tonsillectomy bleeding. Eight (53%) males The mean age was 7 years (range 3-12). Seven (47%) were from County Meath . 5(33%) from County Louth, 2(13%) from County Monaghan and 1(6.6%) from Belfast. 6(40%) arrived to hospital by emergency ambulance,

All but one patient had their surgery in a centre other than Drogheda. 3had occurred in a private Dublin Adult hospital, 2(13%) in a Dublin Children's Hospital,2(13%) in a Dublin Private Children & Adult hospital, 2(13%) in a Private Hospital in the Midlands, 2(13%) in a Dublin Adult Tertiary Hospital. 3further patients had the operation performed in 3 different hospitals in N. Ireland

Conclusion

The HSE National Treatment Purchase Fund (NTPF) policy facilities outsourcing of tonsillectomy surgery for children. This study indicates that this outsourcing for Tonsillectomy is occurring not only to HSE paediatric hospitals, but also to non-paediatric adult hospitals, both private and public, often at a distance from the original hospital of referral

At a national level there is no system in pace to audit outcome of children having surgery under this initiative. Until this happens, it is imperative that all hospitals performing ENT surgery under the NTPF strategy have robust audit systems in place to provide long term follow up figures on their ENT early and late, post-operative complication rate.

[1] Paradise JL, Bluestone CD, Colborn DK, et al. Tonsillectomy and adenotonsillectomy for recurrent throat infection in moderately affected children. Pediatrics 2002; 110:7. [2] Edmonson MB, Eickhoff JC, Zhang C. A population-based study of acute care revisits following tonsillectomy. J Pediatr 2015; 166:607. [3] Shay S, Shapiro NL, Bhattacharyya N. Revisit rates and diagnoses following pediatric tonsillectomy in a large multistate population. Laryngoscope 2015; 125:457. [4] Curtis JL, Harvey DB, Willie S, et al. Causes and costs for ED visits after pediatric adenotonsillectomy. Otolaryngol Head Neck Surg 2015; 152:691.

SCREENING PROGRAMME FOR DEVELOPMENTAL DYSPLASIA OF THE HIP

A ALI1, O AKINLABI2, A RAHMAN2
1GP Trainee, Irish College of General Practitioners, Dublin, Ireland
2Department of Paediatrics, Cavan & Monaghan Hospital Group, Cavan, Ireland

AIMS: Early detection and treatment of infants with DDH will improve outcome and the use of resources. This audit studied the documentation of patients who were referred to the Developmental Dysplasia of the Hip (DDH) screening clinic and compared this with recommended best practice guidelines. The objective of this audit was to analyse the data in relation to current screening programme for the DDH.

METHODS: A retrospective study of patient medical records at Cavan/Monaghan Hospital Group (CMHG) was examined over a 6 month period in 2016. Patients were identified using the High Risk Hip Screening Clinic referral criteria. Data recorded included gender; the criteria for referral, the duration of period between referral date and ultrasound scan (USS) and the outcome of ultrasound findings. In addition, the risk factors and the gender distribution for positive ultrasound findings were assessed.

RESULTS: Within this period, 801 babies were born at CMHG. A total of 97 babies were referred to the DDH screening Clinic. Two patients were excluded from the study as on examination they had a dislocatable hip and were directly referred to Temple Street Hospital Orthopedics Team. A total of 95 patients were reviewed in this audit. A total of three patients did not attend the clinic.The majority of patients were seen within 4-6 weeks of referral. Eighty seven patients (91.5%) had a negative USS finding. Five patients (5.26%) had a positive USS finding, and were then placed into Pavlik Harness for six weeks. Of these five positive findings, all cases were also advised for referral to the TSH Orthopedics team. After six weeks of treatment one case had an abnormal USS, and the remainder of these cases had an unavailable repeat and signed USS report.

CONCLUSION: This cross-sectional study showed that during a six month period at CMHG, 11.86% of all newborn patients had risk factors for DDH, compared to the 20% in available literature. Best practice guidelines suggest that early detection should be accomplished as early treatment of infants with DDH will improve outcome and the use of resources.

DIAGNOSING A RARE DISORDER "OUT OF SEQUENCE"

M Almalkey[1], E Crushell[2], L Olivier-Faivre[3], M O'Grady[4]
1 Department of Paediatrics, Maastricht University, Maastricht, Netherlands
2 National Centre for Inherited Metabolic Disorders, Childrens University Hospital, Dublin, Ireland
3 Centre de Génétique, Hôpital d'Enfants, Dijon, France
4 Department of Paediatrics, Midland Regional Hospital, Mullingar, Ireland

Aims:
To describe the first Irish sibship with the rare lysosomal storage disorder, alpha-mannosidosis; a condition with a reported incidence of 1:500,000.

Methods:
Clinical case notes, biochemical, metabolic and genetic investigations were collated and a review of the literature was conducted.

Results:
A female aged 7 years had global developmental delay, mixed hearing loss requiring hearing aids, muscular contractures, marfanoid features and a facial gestalt suggestive of craniosynostosis. Her 3 year old brother also had developmental delay, mixed hearing loss and muscular contractures but clinical manifestations were milder. He had a flattened face and some frontal bossing. His anterior fontanelle remained widely patent. A genetic diagnosis was considered and a search of Online Mendelian Inheritance in Man (OMIM) lead to a provisional diagnosis of Shprintzen-Goldberg syndrome. Contact was made with a French research group who agreed with the plausibility of the diagnosis, however both siblings tested negative for SKI mutations. Subsequent next generation sequencing of the sister identified two truncating mutations in the MAN2B1 gene c.2402dupG inherited from the mother and c.1645-1G>A inherited from the father, suggesting alpha-mannosidosis. Deficient alpha mannosidase activity from enzyme studies on white cells confirmed the diagnosis in both siblings. Urine for mucopolysaccharides, if undertaken, would have lead to the diagnosis. Skeletal surveys showed mild dysostosis multiplex. Enzyme replacement therapy has been developed and trialled but has not yet been licensed.

Conclusion:
This case illustrates the importance of conducting the complete panel of recommended investigations for global developmental delay to assist a timely diagnosis. It also demonstrates the utility of engaging with a research group when faced with a difficult or rare disorder such that tests which are not commercially available or are prohibitively expensive can be accessed free of charge.

BILIARY ATRESIA IN IRELAND: A COMPARISON OF OUTCOMES OF PATIENTS DIAGNOSED BETWEEN THE YEARS 1992-2014

Fiona Barron [1,2], Tara Raftery [3], Dearbhla Coughlan [3], Geraldine O'Shea [3], Sheila Sugrue [1], Michelle Hurley [3], Billy Bourke [3], Ann-Marie Broderick [3] and Seamus Hussey [3].
[1]Dublin Institute of Technology, Dublin, [2]University of Dublin, Trinity College, Dublin and [3]The National Centre for Paediatric Gastroenterology, Hepatology and Nutrition at Our Lady's Children's Hospital, Crumlin, Dublin.

Background/Objectives: Biliary Atresia (BA) is a life-threatening, progressive cholestatic disease that leads to the obliteration of the bile ducts and presents within the first weeks of life. Surgical palliation with the Kasai portoenterostomy (KPE) is an important early therapy that aims to restore bile drainage to the intestine. However, the majority of patients will eventually require liver transplantation (LT) throughout their lifetime. All Irish children with BA attend a single tertiary paediatric gastroenterology centre. The aim of this study was to determine the clinical and nutritional outcomes of a national cohort of children with BA who survived beyond 1 year following diagnosis.

Methods: Charts of all children diagnosed with BA from 1992-2014 were retrospectively reviewed. Data extracted included weight and lengths measures at various time-points, biochemical data, vitamin levels, episodes of cholangitis, sepsis, presence of ascites. Kaplan Meier survival curves were used to determine survival with native liver (SNL) post KPE and log rank tests used as appropriate.

Results: Fifty-four patients (16 males and 38 females) were included in the final analysis of this study. The median age at KPE was 51 days. 5 and 10-year survival with native liver rates were 42% and 33%, respectively. Eighteen of 50 (36%) patients completely cleared jaundice (determined by total bilirubin levels)by 6 months post KPE. Failure to clear jaundice was significantly associated with development of ascites ($P<0.001$), portal hypertension ($P=0.02$), reduced SNL post KPE ($P<0.001$) and increased progression to LT prior to the age of 1 year ($P<0.001$). Patients who failed to clear jaundice had poorer weight z scores [-2.04 (0.19) vs -0.19 (0.41), P=<0.001] and height z scores [-1.04 (0.37) vs 0.00 (0.09), P=0.12] from as early as 6 months post KPE.

Conclusion: Clearance of jaundice was one of the most important factors associated with SNL and progression to LT. Patients who cleared jaundice had improved weight and height z scores and fewer clinical complications post KPE. Total bilirubin levels can be routinely assessed in the clinical setting and may be the earliest determinant of outcomes post KPE. Strategies to improve outcomes post KPE should focus on early detection of the disease and timely access to treatment.

LEFT VENTRICULAR ROTATIONAL MECHANICS IN INFANTS WITH HYPOXIC ISCHAEMIC ENCEPHALOPATHY AND PRETERM INFANTS AT 36 WEEKS CORRECTED AGE VERSUS CONTROLS

CR Breatnach[1], E Forman[1], A Foran[1], C Montieth[2], L Mc Sweeney[2], F Malone[2], N McCallion[1], O Franklin[3], A El-Khuffash[1]

[1]The Rotunda Hospital, Neonatology, Dublin, Ireland
[2]Royal College of Surgeons in Ireland, Obstetrics and Gynaecology, Dublin, Ireland
[3]Our Lady's Children's Hospital- Crumlin, Cardiology, Dublin, Ireland

Background and aims: There is a paucity of data on left ventricle (LV) rotational physiology, in neonates with hypoxemic ischaemic encephalopathy (HIE) and preterm infants at 36 weeks post menstrual age (PMA). We aimed to assess rotational mechanics in infants with HIE (HIE Group) and premature infants (<29 weeks) at 36 weeks PMA (Preterm Group) and compare them with healthy term controls (Term Controls).
Methods: Echocardiography was performed within 48 hours of birth or at 36 weeks PMA. The following were measured: LV basal and apical rotation, twist (and torsion = twist/LV length), twist rate (LVTR) and untwist rate (LVUTR). One way ANOVA was used to compare values.
Results: There was no difference in gestation (40.0±0.9 vs. 39.9±0.9 weeks, p=1.0) or birthweight (3.9±0.4 vs. 3.6±0.4 Kg, p=1.0) between the HIE Group (n=13) and Term Controls (n=17). The Preterm Group (n=29) had a gestation and birthweight of 35.3±0.9 weeks and 2.2±0.4 Kg. The HIE group had lower twist, torsion, LVTR and LVUTR than the other two groups (**Figure 1**). The Preterm Group had a more negative (clockwise) basal rotation while the Term Group had a more positive (counterclockwise) apical rotation (**Figure 1**).Table one illustrates the rotational mechanics between preterm infants with and without chronic lung disease (CLD) (**Table 1**).
Conclusions: Infants with HIE have blunted rotational mechanics. Preterm infants at 36 weeks PMA have comparable measurements to term infants. However this is achieved by predominant basal rotation rather than Apical rotation. Infants with CLD have increased apical rotation. Those unique maturational patterns warrant further investigation.

THE EFFECT OF SIGNIFICANT PATENT DUCTUS ARTERIOSUS ON DOPPLER FLOW PATTERNS OF PRE-DUCTAL VESSELS: ASSESSMENT OF THE BRACHIOCEPHALIC ARTERY

CR Breatnach[1], O Franklin[2], N McCallion[1], A El-Khuffash[1]
[1]The Rotunda Hospital, Neonatology, Dublin, Ireland
[2]Our Lady's Children's Hospital, Crumlin, Cardiology, Dublin, Ireland

Background and aims

Blood flow to the brain and upper body is thought to be less affected by 'ductal steal' in the presence of a significant patent ductus arteriosus (PDA) in preterm infants. We hypothesized that a significant PDA may have a negative impact on brachiocephalic artery (BCA) flow in preterm infants.

Methods

We carried out serial echocardiography on preterm infants <32 weeks gestation on days 1, 2 and 5 – 7. The following measurements were obtained: PDA diameter; left atrial to aortic root ratio (LA:Ao); left ventricular output (LVO); LV end diastolic diameter (LVEDD); BCA end diastolic velocity (EDV); BCA velocity time index (VTI). The cohort was divided based on PDA presence by Day 5–7. The echocardiography measurements were compared between the two groups.

Results

40 infants with a median [inter-quartile range] gestation and birthweight of 28.1 [25.3 – 30.7] weeks and 1175 [793 – 1398] grams were included. Infants with a PDA by Day 5 – 7 (n=19) had a lower gestation & birthweight, and demonstrated signs of haemodynamic significance (Table 1). Infants with a PDA had lower BCA VTI and reversed BCA EDV by Day 5 – 7 (**Table 1, Figure 1**). On linear regression, a PDA by Day 5 – 7 was independently associated with lower BCA EDV ($p<0.01$) when controlling for gestation.

Conclusions

Ductal steal secondary to left to right shunting in a haemodynamically significant PDA does affect pre-ductal vessels by reducing BCA VTI and reversing flow in the BCA during diastole. The clinical relevance of this phenomenon warrant further study.

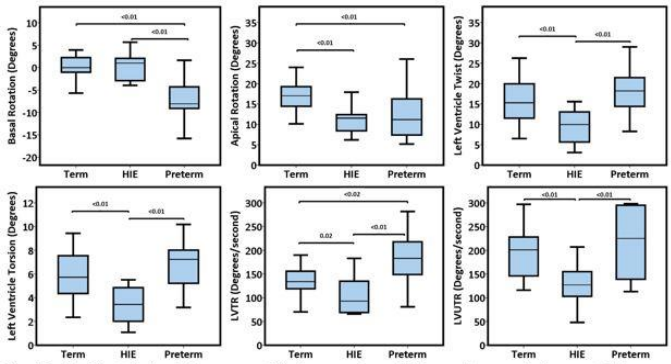

Figure 1: Box Plot of the rotational mechanics measurements in the three groups. One way ANOVA was used to compare the three groups. Pairwise comparisons were conducted using the Bonferroni adjustment. The negative sign was removed from LVUTR for graphical representation. LVTR: Left ventricular twist rate; LVUTR: Left ventricular untwist rate.

	CLD (n=6)	No CLD (n=23)	p value
Gestation (Weeks)	36.0 [35.8 – 36.3]	35.0 [34.4 – 36.0]	0.03
Birthweight (Kg)	2.1 [1.3 – 2.4]	2.3 [2.1 – 2.5]	0.33
Basal Rotation (°)	-5.7 [-8.5 – 0.4]	-8.1 [-9.6 – -5.8]	0.16
Apical Rotation (°)	17.4 [15.2 – 22.5]	9.3 [6.6 – 12.7]	<0.01
Twist (°)	22.5 [20.1 – 24.2]	17.0 [13.9 – 19.9]	0.02
LV Twist Rate (°/s)	193 [160 – 241]	183 [147 – 218]	0.45
LV Untwist Rate (°/s)	-250 [-210 – -288]	-187 [-134 – -295]	0.38
Torsion (°)	9.2 [7.5 – 10.1]	6.6 [5.1 – 7.6]	0.01

Table 1: Differences in Rotational measurement between preterm infants with and without Chronic Lung Disease (CLD). Data are presented as medians [interquartile range]. Mann Whitney U test was

Poster No.8
Neonatal

MATURATIONAL PATTERNS OF VENTRICULAR DEFORMATION BY SPECKLE TRACKING ECHOCARDIOGRAPHY IN PRETERM INFANTS

CR Breatnach[1], A El-Khuffash[1], MD Patel[2], A James[1], A Sanchez[2], PJ McNamara[3], A Jain[4], O Franklin[5], A Hamvas[6], GK Singh[2], L Mertens[7], PT Levy[2]

[1]The Rotunda Hospital, Neonatology, Dublin, [2]Washington University School of Medicine, Pediatrics, Saint Louis, USA, [3]The Hospital for Sick Children, Neonatology, Toronto, Canada, [4]Mount Sinai Hospital, Paediatrics, Toronto, Canada, [5]Our Lady's Children's Hospital- Crumlin, Cardiology, Dublin, [6]Northwestern University Feinberg School of Medicine, Pediatrics, Chicago, USA, [7]The Hospital for Sick Children, Cardiology, Toronto, Canada

Background and aims: Two-dimensional speckle tracking echocardiography (2DSTE) derived myocardial strain is a highly feasible and reproducible measure of left ventricle (LV) and right ventricle (RV) systolic function in premature infants, but lacks prospective longitudinal reference values. We aimed to determine the maturational changes in LV and RV systolic strain to establish reference values in preterm infants from birth to 36 weeks post menstrual age (PMA).

Methods: LV global longitudinal strain (GLS) and RV free wall longitudinal strain (fwLS) were measured at one, two, 5-7 days, 32 and 36 weeks PMA in infants < 29 weeks gestation. Measures were generated with using a validated protocol for image acquisition and data analysis. A sub analysis of infants with a patent ductus arteriosus (PDA) and chronic lung disease (CLD) was performed.

Results: 201 preterm infants with a mean (SD) gestation and birth weight of 26.5 (1.4) weeks and 909 (220) grams were included. There was an increase in LV GLS from Day 1 to Day 2 with no further change. RV fwLS remained relatively constant until 36 weeks PMA (**Table 1**). Infants with a PDA had a higher LV GLS on Day 5-7. Infants with CLD (n=80/132) had lower RV fwLS at 32 and 36 weeks PMA (**Figure 1**). This relationship remained significant when adjusting for gestation.

Conclusions

This study establishes reference values of RV and LV strain patterns in preterm infants and tracks the maturational changes during postnatal development. The study suggests that 2DSTE can be used to assess ventricular function in preterm infants.

Table 1: Change in LV and RV strain

	Day 1 n=103	Day 2 n=92	Week 1 n=67	32 Weeks n=119	36 Weeks n=132	p
Weight (Grams)	902 (202)	893 (219)	917 (241)	1392 (235)*	2196 (342)*	<0.001
Heart Rate	158 (14)	163 (12)	166 (12)*	158 (17)	154 (18)	<0.001
LV Global Strain (%)	-17.8 (4.0)	-20.0 (3.4)*	-21.7 (3.4)*	-19.9 (2.6)*	-20.7 (2.6)*	<0.001
RV Free Wall Strain (%)	-18.6 (4.9)	-19.6 (4.7)	-20.4 (6.3)	-20.0 (3.4)	-21.9 (4.6)*	<0.001

One way ANOVA was used as some of data was not serial in nature. * = p values <0.05 compared with Day 1 value (Bonferroni adjustment).

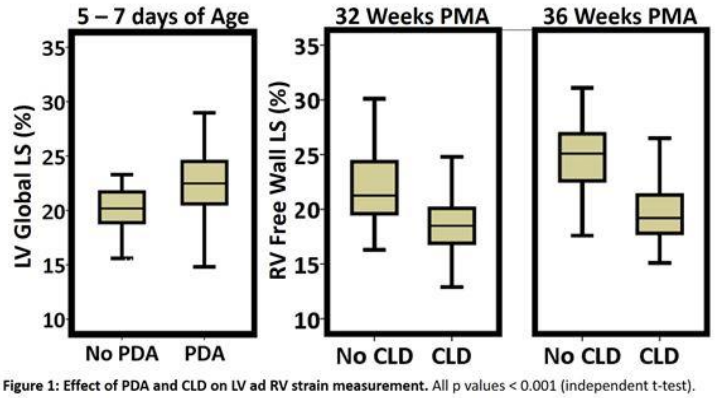

Figure 1: Effect of PDA and CLD on LV ad RV strain measurement. All p values < 0.001 (independent t-test).

CAN BREASTFEEDING IN THE FIRST 6 MONTHS PREVENT ROTAVIRUS GASTROENTERITIS?

Catherine Breen, Matthew Varghese
Paediatric Emergency Department, Paediatric Department, Our Lady Hospital Of Lourdes, Drogheda, Co. Louth.

Background & Aim:	Rotavirus Gastroenteritis is a major cause for hospital admission in the Paediatric population. A recent systematic review published in March 2016 [1] suggests that there is a significant benefit in prevention of Rotavirus gastroenteritis among children by practicing exclusive breastfeeding throughout the first six months of life. The aim of this audit was to assess exclusive and predominate breast feeding rates in Rotavirus infected children in Our Lady Hospital Of Lourdes, Drogheda, Co. Louth. These rates were then compared to the national breastfeeding rates.
Standard:	The most recent national standard in Ireland for exclusively breastfed at 6 months is estimated at 6% and predominately breastfed at 25% [2, 3].
Methodology:	All children under the age of five years with a positive stool sample of Rotavirus were included. Duration of the study was one year (2/1/2015 – 2/1/2016).Contact information of the parents were accessed from the hospital PIMS systems. 129 patients met the criteria and 56 responded to the questionnaire by telephone. The WHO definition of "Exclusive Breastfeeding'' (A) and "Predominately Breastfeeding'' (B) was used.
Results:	The total number of parents responded to the questionnaire were 56 (n=56). Out of these 1.7% (n=1) were exclusively breastfed for 6 months and 8.9% (n=5) predominately breastfed for 6 months. 89% (n=50) reported bottle feeding.
Conclusions:	This audit of Rotavirus infection in breastfeeding babies showed that breastfeeding in the first 6 months is beneficial in preventing Rotavirus gastroenteritis. In our study 89% Rotavirus infection occurred in bottle fed babies whereas only 11% occurred in breastfed babies with only 1.7% in exclusively breastfed. The rate of breastfeeding in this study cohort is lower than the national average. More research is needed in this area to give a more accurate comparative figure. This audit can be repeated on an annual basis to give an indication of trends within this group.

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THE USE OF IMMATURE NEUTROPHILS IN THE DIAGNOSIS OF EARLY-ONSET NEONATAL SEPSIS

J Brennan[1], R O'Neill[2], A Branagan[2], M O'Neill[2], D McGowan[1]
[1]Haematology Laboratory, Mayo University Hospital, Castlebar, Co. Mayo, Ireland
[2]Department of Paediatrics, Mayo University Hospital, Castlebar, Co. Mayo, Ireland

Aims: Early-onset neonatal sepsis is a low incidence disease which can cause significant morbidity and mortality in those affected. Immature-to-total neutrophil (I/T) ratios have been evaluated in previous studies and found to have good negative predictive values in the diagnosis of early-onset sepsis. The measurement of immature neutrophils requires a manual white cell differential which is subject to significant inter-observer variability. Our study aimed to standardise immature neutrophil counts in our laboratory and evaluate the use of the I/T ratio in the diagnosis of early-onset sepsis in neonates >35 weeks gestation.

Methods: To reduce inter-observer variability and standardise enumeration, a comprehensive teaching manual was prepared and training implemented on the identification and classification of immature neutrophils. Twenty adult and ten neonatal samples were used to determine the inter-observer variability of immature neutrophils. Following a chart review to determine their final diagnosis, the usefulness of the I/T ratio was determined retrospectively in a cohort of 31 neonates (>35 weeks gestation) being clinically assessed for early-onset sepsis.

Results: Results showed that despite attempts to standardise immature neutrophil enumeration, significant inter-observer variability remained. There was no significant difference in the I/T ratios of sepsis-positive neonates compared to those of neonates negative for sepsis (P=0.47–0.76).

Conclusion: The significant inter-observer variability of the I/T ratio and its inability to distinguish between infected and uninfected neonates, meant that despite its high negative predictive values it did not demonstrate clinical utility, and hence is unsuitable for introduction into a routine medical laboratory.

A PROSPECTIVE STUDY OF FEBRILE CONVULSIONS IN GENERAL PAEDIATRIC PRACTICE

N. Bussmann, A.M. Murphy, Elizabeth O 'Mahony
Department of Paediatrics, University Hospital Limerick

Aims

A febrile convulsion is a seizure associated with a fever caused by infection or inflammation outside the central nervous system in a young child who is otherwise neurologically normal. Simple febrile convulsions last less than 15 minutes and do not reoccur within 24 hours, complex febrile convulsions last longer than 15 minutes, have focal features and can reoccur within 24 hours

A prospective study was carried out in a Paediatric unit with a catchment area of 100,000 children and 15,000 paediatric Emergency Department presentations annually.
The objective of this study was to review all the patients admitted under one Paediatrician and to identify common parameters in this population's presentation as well as their management, compared to those identified in a literature review.

Method

A literature review of paediatric febrile convulsions identified common parameters in presentation and management. A simple table was created from these parameters to enable collection of specific data from patient charts.
All paediatric patients admitted under one Paediatrician from July 11th 2015 to 31st May 2016 with a febrile convulsion (typical and atypical) were included.

Results

There were 19 patients reviewed during this 10 month period (age range 1 to 3 years) (10 female, 9 male). All 19 presentations were documented to have a febrile seizure lasting under 5 minutes. No child had a focal seizure. Four children suffered from recurrent febrile seizures. Of these, three children had further febrile seizures in the same illness. One child was investigated for delayed walking but was developmentally normal at presentation. No child required resuscitation or neonatal admission. 12 of the 19 children had a family history of febrile seizures. 10 patients either had an EEG organised during admission or as an outpatient. All patients had blood tests. No child underwent a lumbar puncture. Fever was attributed to viral infection. Thirteen children were discharged with a prescription for antibiotics and one for Tamiflu. One child went on to develop a seizure disorder and required anti-epileptic medication. Thirteen children were discharged with prophylactic buccal midazolam.

Conclusion

All children were within the expected age-group. The majority had simple febrile seizures. Outside of the advice of the AAP clinical practice guideline, an EEG was organised for over half of patients and blood tests drawn.[2]

This review reflects on the typical presentation of febrile seizures but highlights a practice outside of the AAP guideline. A local clinical practice guideline could be developed to guide practitioners on consistent management to avoid superfluous investigations.

SAFETY AND EFFECTIVENESS OF A ORAL CHLORAL HYDRATE SEDATION PROTOCOL FOR CHILDREN UNDERGOING MRI IMAGING.

D Butler[1], D Healy[1], R Barry[1], O O'Mahony[2]
[1]Dept of Paediatrics, Mercy University Hospital, Cork, Ireland
[2]References:, Cork University Hospital, Cork, Ireland

Aims:
Chloral Hydrate has been used for sedation in the MUH since 2008[1] due to the absence of a general anaesthetic facility for MRI scanning in children. A previous study in the same department conducted 8 years ago demonstrated an overall success of 86%[1]. Since then the introduction of portable saturation monitors has aided in the safety of sedation. This study aims to assess the current success and safety of a 50/80/100mg/kg dosing schedule based on age and effectiveness.

Methods: A retrospective chart review was conducted to assess overall imagining success rate as well as cardiovascular and neurological complications in those undergoing MRI in a 6 month period. The total sample size was 68 patients. Primary outcomes were failure to sedate, length of stay and recorded complication rate.

Results: The overall success rate was 97%,(66/68), with no recorded respiratory or cardiovascular complications. In the 2 cases that failed to sedate, they were both 3.5 yr old males who had received the 80mg/kg dose. 11.7%(8/68) of patients required the 50mg/kg dose, (mean age 13 months), and 10.2% (7/68) required the 100mg/kg dose, (mean age 51 months), as they had failed to sedate post the initial 80mg/kg dose. Only 1 patient required a length of stay over 1 day due to persistent sedation and was discharged the following day.

Conclusion: Overall the success of the current dosing schedule is adequately high with an excellent safety profile. This evidence supports the use of the current protocol with included safety measures to allow for MRI under sedation in facilities without access to general anaesthetic.

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PREVALANCE OF CELIAC DISEASE IN TYPE 1 DIABETES: EXPERIENCE AT UNIVERSITY HOSPITAL

Dhani Bux, Behzad Ali, University Hospital Waterford

AIMS

To establish prevalence of positive serology, Tissue Transglutaminase (TTG) in children with type1 diabetes and to establish screening practices

METHODS

Retrospective review of patients files diagnosed with type-1 diabetes at University Hospital Waterford. A Cohort of 86 patients with type -1 diabetes was analysed. Patients with elevated Tissue Transglutaminase (TTG) >10 U/ml were included in this study. Electronic laboratory system was used to retrieve the results. Files of all the patients with positive serology were reviewed. Intestinal biopsies were analysed in patients with abnormal TTG. Impact on gylcaemic control was critically reviewed.

RESULTS

Total 86 patients with established diagnosis of Type-1 Diabetes were included in this study. Male were 52% and female at 48%. Seven patients (8.1%) had elevated TTG. Two patients had elevated TTG at time of diagnosis. Five developed elevated celiac antibodies within 1- 2 ½ years of diagnosis. Small intestinal biopsy was consistent with celiac in 4 patients. 1 had normal biopsy. Two patients are waiting list for biopsy.
Only patient had associated hypothyroidism requiring Thyroxin replacement therapy.

CONCLUSION

We established that prevalence rate of celiac disease in type 1 diabetes is 8.1%.All patients with positive serology results were within 1- 2 ½ years of diagnosis of diabetes. Screening should be considered at time of diagnosis of Type 1 diabetes and within 1- 3 years thereafter. Further studies should be considered to establish role of screening for celiac beyond 3 years.

INCIDENCE OF DKA IN NEWLY DIAGNOSED TYPE 1 DIABETES IN CHILDREN – EXPERINCE AT UNIVERSITY HOSPITAL WATERFORD.

Y Diaz Rodriguez[1], D Bux
[1]Department of Paediatrics, University Hospital Waterford, Dunmore Road, Waterford.

Aims:
To establish incidence of DKA in newly diagnosed Type 1 Diabetes diagnosed during 2003-2016.

Methods:
Retrospective review of patients' files diagnosed with Type 1 Diabetes at University Hospital Waterford. A Cohort of 91 patients with Type Diabetes was analysed. Diagnosis of DKA was based on ISPAD guidelines. Data was extracted from "Diabetes Register" maintained on paediatric unit at UWH. Patients were analysed according to age group and year of distribution.

Results:
Total of 33(36.3%) patients out of 91 had DKA at presentation. There was female preponderance at 58%. Out of total DKA, 24 % of the patients were under the age of 5 years, however majority (75%) were more than 5 years of age. All of the patients (33) presented with polyuria and polydipsia. Fourteen patients (42.4%) had a history of weight loss. Incidence of DKA was noted to be high in the years from 2012 to 2016.

Conclusion:
We established the incidence of DKA in newly diagnosed Type 1 Diabetes at 36.3%, with slight female preponderance, at Regional Diabetic Unit. One fourth of the patients were under 5 years of age. Almost all patients presented with classical features of polydipsia and polyuria, weight loss was reported in 42.4% of all patients. There was increased trend of DKA from 2012 to 2016 especially in toddler age group, which highlights the importance of establishment of regional PICU in the Republic of Ireland in order to manage severe DKA in this age group.

SWELLING, ERYTHEMA AND INDURATION OF THE GENITALIA IN PEDIATRIC PATIENTS? THINK OF METASTATIC CROHN'S DISEASE.

B Byrne, M Lynch, L Roche, B Ramsay, K Ahmed
[1]Dermatology, University Hospital Limerick, Limerick, Ireland

Aims: Metastatic Crohn's Disease (MCD) is a cutaneous manifestation of Crohn's Disease (CD) at sites distant from the gastrointestinal tract. Although well recognised in adults, there has been limited published literature on children with MCD.
Our aim was to review the literature on MCD of the genitalia in pediatrics highlighting the most relevant clinical aspects, aiming to increase awareness of MCD in order to prevent future delay in diagnosis. We report two children that were diagnosed with MCD of the genitalia after significant delay resulting in physical and psychologic morbidity.

Methods: Electronic databases Cochrane, Medline, Pubmed, Embase and Web of Science were searched, using a combination of MESH and full text search. The inclusion criteria were children from 0-18 years of age with metastatic cutaneous Crohn's disease of the genitalia. Exclusion criteria were; Cutaneous Crohn's disease without genital involvement, and articles not available in English.

Results: To date 51 children have been reported with a diagnosis of MCD of the genitalia with a near equal gender balance. The average age of presentation was 10 years. Swelling, erythema and induration of the skin were the most common clinical features for girls and boys. Only 11.1% of the girls and 33.3% of boys had a previous diagnosis of CD. Approximately half had gastrointestinal symptoms. Perianal involvement occurred in 81.5% of girls and 54.2% of boys. Children presented to 8 different medical specialities. Dermatitis and sexual abuse were the most common misdiagnoses. There was a wide variation in time from start of genital symptoms to eventual diagnosis of CD, ranging from 1 week to 10 years. Genital skin biopsy and colonoscopy were shown to be essential investigations in the diagnosis of MCD.

Conclusions:
Our findings highlight the importance of MCD in the differential diagnosis of children presenting with genital swelling, erythema and induration even in the apparent absence of CD.

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AN AUDIT OF ADHERENCE TO LOCAL PRESCRIBING GUIDELINES FOR INOTROPES IN NICU

S Casey[1], S McCormick[1], P O'Connor [1], P Duddy[2]
[1]Department of Neonatal Medicine, Coombe Women and Infant's University Hospital, Dublin, Ireland
[2]Department of Clinical Pharmacy, Coombe Women and Infant's University Hospital, Dublin , Ireland

Aims:
The lack of high quality evidence to support inotrope prescription in neonates is well recognised internationally. Choice and dose of inotrope varies greatly among centres. The Coombe Women and Infant's University Hospital (CWIUH) has local guidelines using best available evidence for inotrope dosing. The aim of this audit was to assess adherence to these guidelines.

Methods: A retrospective chart review of 25 infants who received any or all of Adrenaline, Noradrenaline, Dopamine, and Dobutamine from December 2014 to February 2015 was conducted. Data was recorded using a proforma sheet that included weight, gestational age, starting dose, maximal dose, number of dosing increments to reach maximal dose, and time to reach maximal dose. Statistical analysis was performed using Microsoft excel.

Results: Adrenaline is the most commonly used inotrope in our unit (n=24), and starting doses ranged from 0.1-1mcg/kg/min with a mode of 0.1mcg/kg/min (n= 9). Maximal doses ranged from 0.1-1mcg/kg/min with a mode of 0.5mcg/kg/min (n= 4). Starting doses for Noradrenaline ranged from 0.01-0.05mcg/kg/min with a mode of 0.02mcg/kg/min and 0.05mcg/kg/min (n= 3), and maximum doses ranged from 0.01-0.6mcg/kg/min with a mode of 0.1mcg/kg/min (n= 2). Starting doses for Dopamine ranged from 5-10mcg/kg/min with a mode of 10mcg/kg/min (n= 4), and maximum doses ranged from 5-10mcg/kg/min with a mode of 10 (n=5). Only 2 patients received Dobutamine during this period, with starting doses ranging from 5-10mcg/kg/min and maximum doses of 10-15mcg/kg/min.

Conclusion: Current inotrope prescribing largely adheres to local guidelines. However, in some cases guideline doses were exceeded. Further studies on safe dose ranges and titration intervals of inotropes are warranted. An audit of all level 3 units' inotrope prescription data is necessary in advance of development of national consensus guidelines for inotrope prescribing.

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HOW DO YOU PUT YOUR BABY TO SLEEP SAFELY?
AN OBSERVATIONAL CRIB AUDIT OF NEWBORN SLEEP PRACTICIES IN HOSPITAL.

LM Clark DNP,CPNP[1], C Milana MD[1], G Proper MS,RN[1]
[1]Pediatrics, Stony Brook Children's, Stony Brook, NY, USA

Background: Sudden Infant Death (SIDS) continues to be the leading cause of death in infants after 1 month of age with the peak between 2-4 months of age. In the United States, the SIDS rate is 6.05 per 1,000 live births. Modeling behavior to reduce the risk of SIDS requires both the health care provider (HCP) and parents to practice the safe sleep recommendations.(Gelfer,2013; Hackett, 2013) The American Academy of Pediatrics (AAP, 2011) identified a strong association between a newborn's sleeping environment, proper newborn sleep position " back to sleep", and risk of SIDS.(Moon, 2011)

Methods: Observation of 300 newborns and their crib environment audits were completed March-May 2014. Data collected included: caregiver present; newborn sleep position; proper swaddling; crib position and environment. All patient and staff information were de-identified and with IRB approval. Data analyzed SPSS version 22.0.

Results: Observations (254/300) were analyzed and found: newborns sleeping in a crib 52% (132); held by an adult 43% (110) and in the bed 5% (14/254) of the time. Incorrect positioning was identified 22% (56); newborn positioning in crib 15% (21/110); held by a sleeping adult 19% (21/108) or co-sleeping 3% (9). Infants were routinely swaddled 80% (203/254) correctly 60% of the time; crib positioned flat 34%; and with no additional items in the crib 12%.

Conclusion: Modeling behavior to reduce the risk of SIDS requires participation of parents and HCP. Many parents are influenced by the fact that the cause of SIDS is unknown, lack of understanding of the AAP guidelines and how certain behaviors could be defined as risk factors. An education program will be developed to translate the AAP guidelines on Safe Sleeping Practices for HCPs, parent education and a culture of modeling. HCPs have a unique opportunity to influence parent behavior beginning at birth and continuing through the hospital stay to improve compliance.

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RISK FACTORS AND SOCIAL WORK REFERRALS IN CHILDREN UNDER THREE YEARS PRESENTING TO A PAEDIATRIC ED WITH HEAD INJURY

Clarke E, Petrea O, Koe S, Bolger T. Paediatric Emergency Department, AMNCH.

Aims : To ascertain if ED staff were referring appropriately to medical social work based on the Tallaght hospital policy and medical social work guidelines. A secondary aim was to examine the detail of documentation in the clinical notes.

Methods : A retrospective chart review of children aged 0-3 years presenting with head injuries over a year, using the electronic system used in the ED. Possible red flags for NAI and triggers for social work referral were identified. Children with signs or symptoms requiring admission +/- CT were also identified. Social work referrals were tracked using the electronic order system.

Results : 708 individual risk factors were identified with 192 children having ≥2 (28.6% of total). 14.6% (n=98) of the total were referred. 22.2% (n=55) <1 year were referred; 10.2% (n=34) of 13 – 24 months; 0% > 2 years. 87.8% (n=86) were referred after admission. ED staff referred 1.79% (n=12) directly. 35.5% of children under 12 months were nonmobile and not referred. 13-24 months were more likely to be referred following an unwitnessed fall than 0-12 months. Poor supervision did not impact on referral rates in the 0-12 age group, neither did a history of previous injury in any age group. 13% of children in the 25-36 month group presented late and were not referred. 285 instances of insufficient documentation were identified.

Conclusions : ED staff are not adhering to the policy of referring all children with head injury under the age of 2 years, or referring on the basis of potential risk factors for NAI as per the local hospital social work guidelines, raising concerns that a diagnosis of NAI could be missed. A consensus should be reached between the paediatricians, paediatric surgeons and medical social workers as to a more structured guideline for referrals and all NCHDs and nursing staff should be aware of this.

MORE THAN JUST "A TOUCH OF THE FLU": ACUTE NECROTIZING ENCEPHALOPATHY OF CHILDHOOD

A Cleary[1], I Gill[3], D O'Keeffe[2], M Herzig[1], B Lynch[3], NM Allen[1]
[1]Department of Paediatrics, National University of Ireland, Galway, Ireland
[2]Department of Radiology, Galway University Hospital, Galway, Ireland
[3]Department of Child Neurology, Children's University Hospital, Temple Street, Dublin , Ireland

Aims:
To describe a previously well child with acute necrotizing encephalopathy triggered by influenza A virus infection.

Method:
Clinical vignette: A 3-year-old Indian girl presented to the emergency department in a comatose-like state three hours following a brief febrile generalised tonic-clonic seizure. She had been previously well apart from mild coryza. In the ED her Glasgow coma scale fluctuated between 4-7/15. She displayed intermittent episodes of extensor trunk posturing and fluctuating limb tone with normal tendon reflexes, plantar responses, pupils and fundoscopy. Systemic examination was unremarkable.

Results:
Initial investigations revealed mild mixed acidosis and moderate transaminitis. Acute brain CT scan was normal. She was empirically treated with intravenous lorazepam, phenytoin, ceftriaxone and acyclovir. She remained intermittently encephalopathic and mute for 48 hours. Blood and CSF infective screen, microscopy and inflammatory screen were unremarkable. MRI of the brain (at 48 hours) showed bilateral symmetrical signal change in the thalami, external capsule, putamen, cerebellum and brainstem. MRI Apparent Diffusion Coefficient (ADC) map showed restricted diffusion in the thalami and the characteristic appearance of "acute necrotizing encephalopathy (ANE) of childhood" (darker inner zone representing ischaemia and brighter outer zone representing vasogenic oedema). Influenza A (nasopharyngeal PCR) tested positive. She was immediately treated with oseltamivir and intravenous methylprednisolone. She made an excellent motor, speech and cognitive recovery.

Conclusion:
ANE is a rapidly progressive under-recognised cause of childhood encephalopathy.(1) It is usually triggered by viral illnesses, most often influenza,(2) and can have an underlying genetic susceptibility with recurrent episodes due to mutations in the nuclear binding protein RANPB2 (negative in this case). (3) Cytokine storm following viral infection leading to systemic autoimmune response is thought to play a role in the pathogenesis of ANE. Prognosis is variable, with significant risk of mortality and morbidity, however prompt treatment with high dose immunotherapy may reduce complications.

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GP REFERRALS TO A GENERAL PAEDIATRIC OUTPATIENT SERVICE

A Collins[1], J Cox[1], V Chirtes[1], J Fitzsimons[1]
[1]Paediatric Department, OLOLH, Drogheda, Ireland

Aim:
The aim of this study is to identify the most common conditions being referred to general paediatric clinics. By doing so we hope to be able to improve referral pathways and if possible enable general practitioners to deal with some of the more common paediatric presentations independently.

Methods:
Two hundred referral letters on the waiting list for the paediatric clinic were reviewed under the headings of sex, age and referral reason. We also looked at the quality of the referral letter and marked it out of four on the basis of legibility, a clear and relevant history, interventions attempted by GP, and lastly a documented reason for referral.

Results:
There was a total of 70 indications for referral. However the top five- abdominal pain, asthma/wheeze, recurrent UTI, heart murmur, first UTI- accounted for 25.5% of all referrals. The most common twelve referral reasons accounted for over 50%. The number of referrals at each age was inversely related to the age of the patient. Only 3% were on the National Template. We found that 53% of the letters audited reached the four standards we had set for a high quality letter and only 2.5% reached only one.

Conclusion:
The clinical remit of a general paediatrician is very broad. However, we have shown that five presentations- abdominal pain, asthma/wheeze, recurrent UTI, heart murmur, first UTI- account for 25% of the new clinic patient work load. By improving GP management of these conditions in the community or by improving referral pathways, it may be possible to alleviate some of the pressure on already busy general paediatric clinics.

EXPLORING THE NECESSITY AND EFFICACY OF BLOOD TESTING, TO OBTAIN LIPID PROFILES IN OBESE CHILDREN UNDER 5 YEARS ATTENDING AN OBESITY SERVICE

K Collins Smyth[1], N Kelly[2], S Doyle[1], S Murphy[1]
[1]Paediatrics , Temple Street Children'sUniversity Hospital , Dublin, Ireland
[2]Dietetics, Temple Street Children's University Hospital, Dublin, Ireland

Aim

To determine if obesity in children less than 5 affects their lipid profile.

Methods

This is a retrospective review of the fasting bloods of obese children aged 1-5 years, referred to the specialty obesity clinic (N=17). Obesity is defined as a BMI >98th centile of gender specific BMI-for-age. The bloods examined were taken at the initial assessment appointment and all are fasting samples. We looked at Total cholesterol, High density lipoprotein (HDL), Low density lipoprotein (LDL) and Triglycerides. Results compared with the standard normal ranges classified by the American Academy of Paediatrics (AAP)1

Results

The mean age of participants was 3.73 years (max: 5.0 min: 1.53).
The prevalence of abnormal fasting total cholesterol, triglycerides, HDL and LDL among obese children under five years was 29.4%, 0%, 25% and 16.7% respectively.
The mean total cholesterol was 3.9 (min 2.2. max 5.4).
Only 12/17 patients had HDL and LDL measured. Mean HDL was 0.9863 (min: 0.73 Max: 1.72). Mean LDL was 2.13 (min: 1.27. max: 3.12).
13/17 patients had triglycerides levels measured. Mean triglyceride level was 0.59 (min: 0.40. max: 0.79). No patient had abnormal triglycerides.

Conclusion

Childhood obesity tracks into adulthood and the associated comorbidities are a significant cause of morbidity and mortality. However these comorbidities such as abnormal lipid profiles can be present in childhood.

It is not known at what stage in childhood the metabolic abnormalities associated with obesity begin but the treatment of obesity in childhood is important in reducing health risks in childhood and adult life. This review shows abnormalities in lipid profile in obese children under 5 years but given the small number of patients further analysis is required to determine statistical power.

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INVESTIGATION AND TREATMENT OF UTIs – ARE WE DOING IT RIGHT?

J Cox[1], I Farombi-Oghuvbu[2]
[1]Paediatric Department, Our Lady of Lourdes Hospital, Drogheda, Ireland
[2]Paediatric Department, Our Lady of Lourdes Hospital, Drogheda, Ireland

Introduction:

Current guidelines recommend that urine samples should only be tested in paediatric patients when there is a clinical suspicion of UTI[1]. Similarly, positive bacterial urine culture should only be treated if the patient is symptomatic of UTI[2-3]. Inappropriate testing of urine samples when not clinically indicated may result in increasing work load for laboratories and medical staff and increasing anxiety for patients and parents.

Aims:

NICE UTI Guidelines was used as a benchmark to determine if:
1) urine samples are tested appropriately in the emergency department
2) treatment of positive urinalysis is in accordance with guidelines

Methods:

A retrospective audit. Data collected from 50 paediatric patients in April 2016 who visited the ED and had a urine sample sent to the microbiology laboratory.
Demographic data and presence or absence of UTI symptoms as per NICE guidelines was documented. Results of ward and laboratory urinalysis, and treatment were recorded**.**

Results:

Ages ranged from 2 months to 16 years. Twenty patients reported pyrexia, 21 vomiting, 20 abdominal pain, 14 poor feeding. Four patients had 'classical' symptoms of UTI; none reported haematuria. Four had urinalysis done for pyrexia of unknown origin. Three patients had urinalysis done without UTI symptoms. Eight patients with positive culture received antibiotic treatment for UTI while 17 were treated for alternative diagnosis. One patient received treatment for positive urine culture despite no signs or symptoms of UTI. Two patients with UTI symptoms and subsequent negative urine culture were treated with antibiotics, while 23 patients with negative culture had alternative diagnosis.

Conclusion:

Majority of patients had urinalysis appropriately carried out as recommended by NICE guidelines. However, as only nine patients had a final diagnosis and subsequent treatment for UTI, most patients had alternative diagnosis. As it is frequently recommended not to carry out a urinalysis when another diagnosis is more likely, this study highlights the need for regular evidence based review of UTI management.

NICE guidelines ; Urinary tract infection in under 16s: diagnosis and management 2. Interpreting asymptomatic bacteriuria. Cormican, M, Murphy AW, Vellinga, A. BMJ 2011 Aug 4;343:d4780. 3. Interventions for covert bacteriuria in children. Cochrane Database Syst Rev. 2012 Feb 15;2:CD006943. Fitzgerald A, Mori R, Lakhanpaul M.

THE DIRECT AND INDIRECT COSTS OF HOSPITAL ADMISSION WITH ROTAVIRUS GASTROENTERITIS

M Crealey[1], I Delaney[1], E Ryan[1]
[1]Department of Paediatrics, Galway University Hospital, Galway, Ireland.

Aims:

1. Calculate cost of treating a child admitted to hospital with rotavirus gastroenteritis (RVGE).
2. Identify the impact a RVGE admission has on the family unit.

Methods

A retrospective review of all children admitted to Galway University Hospital (GUH) with RVGE between January and December 2014 was undertaken. Cases were identified from the hospital microbiology database. Data was collected from the patient charts, from the laboratory computer system and also by telephone contact with the parents of the cases. The Vesikari Clinical Severity Scoring System (VCSSS) was used to assess disease severity[1]. Approval was obtained from the Hospital Ethics Committee.

Results

105 children were admitted to hospital with RVGE in 2014 and it accounted for 5.5% of admissions from the emergency department (ED). The mean age of presentation was 1.8 years. Children had symptoms for a mean of 2.6 days at presentation and 44% had attended their GP prior to admission. Most of the children scored severe on the VCSSS. The mean length of stay was 2 nights (2-12). The total cost of RVGE admissions in GUH in 2014 (including consumables, tests, nursing, catering, heat, medical care etc) was €170,395. The total cost per patient staying for the mean of 2 nights with RVGE was €1622.81. The mean number of parental work days missed on account of admission was 5.8 (range 0-14). 85% would welcome the introduction of the vaccine into the routine immunisation schedule in Ireland.

Conclusions

RVGE is associated with considerable morbidity and generates significant direct healthcare costs. There are also several indirect social costs such as parental absenteeism from work and disruption of the family unit. Introduction of a rotavirus vaccine into the National Childhood Immunisation programme may reduce these costs as has been the experience in other European countries.

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CLINICAL PRESENTATION OF CASHEW NUT ALLERGY IN A PAEDIATRIC COHORT ATTENDING AN ALLERGY CLINIC IN THE WEST OF IRELAND

M Crealey[1], S Alamin[2], V Tormey[2], E Moylett[1]
[1]Paediatrics, National University of Ireland, Galway, Ireland
[2]Immunology, Galway University Hospital, Galway, Ireland

Aim To review the clinical features of cashew nut (CN) allergy in a group of children attending a paediatric allergy clinic.

Methods Patients identified retrospectively via the immunology database, Galway University Hospital, Oct 2011 - Sept 2015. Individuals sensitised to CN (serum specific IgE, Cap Immuno Assay, > 0.35 kUa/L) were identified. Phone interviews were conducted; relevant demographic and clinical information collected. Severity of CN allergy was rated in line with standard methods, mild, moderate and severe dependent on extent of systemic reaction.

Results Over the 5-year period, 115 children were identified; 102 were individually contacted; 66 (65%) were male. Of the 102 children, 55 had a history of CN exposure with clinical reaction (13 mild, 13 moderate, 29 severe); 43 had no prior CN exposure, and 4 were sensitised and tolerating CN. Mean CN serum IgE level was 8.92 kUa/L in the clinical reaction group and 14.7 kUa/L in the sensitised group. 24 patients reported use of adrenaline for management of prior reactions. Mean age of onset of CN allergy was 4 years with CN exposure most commonly as a whole nut (42/55). Other food allergy was reported in 44/55; peanut 5, tree nut 9, other food 30. Concerning atopic illness, 24/55 reported clinically significant asthma; 42/55 had a current or past history of eczema and 36/55 had allergic rhinitis.

Conclusion Children are ingesting CN in early childhood. In our study the majority of parents reported moderate to severe reactions. Ingestion is most commonly in the nut form. Children with CN allergy are likely to be atopic with additional food allergies. Adrenaline autoinjectors should be included as part of the management plan.

BEST FLUID FOR BABY?

S Delaney[1], F Neenan[2]
[1]School of Medicine, NUI Galway, Galway, Ireland
[2]Pediatrics Department, Portiuncula Hospital, Ballinasloe, Ireland

Aims: To establish what the current standard practice for neonatal maintenance fluids is, in the absence of a national guideline, and to investigate the safety of using hypotonic solutions as part of routine care, particularly in the first 2 days of life.

Methods: Surveyed primary, secondary and tertiary care centres regarding protocol for standard maintenance fluids used in the first 2 days of life. Existing guidelines from international paediatric hospitals and organisations were compared and a literature search (PUBMED, MEDLINE) was carried out to determine if there is any evidence against the use of hypotonic solutions in neonates

Results:

- The majority of Irish neonatal care centres surveyed (9/11) use 10% Dextrose in the first 24hrs and 0.18% Saline with 10% Dextrose in the second 24hrs.
- Internationally, guidelines appear to be in agreement in the use of a combination of Dextrose-10% and 0.18%-Saline.
- Despite multiple recorded cases of paediatric deaths in older children as a result of use of hypotonic saline[1] there is no evidence to suggest that it may be dangerous in early neonates.

Conclusions: Despite the absence of a national guideline the majority of Irish neonatal units follow the same protocol for routine maintenance fluids in early neonates and those asked were familiar with the protocol used in their own unit. However, the development of a national guideline would be beneficial in standardising care and maximising the cost-benefit ratio.

1 - Patient safety alert: Reducing the risk of hyponatraemia when administering intravenous infusions to children March 2007
http://www.nrls.npsa.nhs.uk/alerts/?entryid45=59809&q=0%C2%AChypotonic%C2%AC

HOW TO DECREASE INAPPROPRIATE ANTIMICROBIAL PRESCRIPTION FOR SORE THROATS: COMPARISON OF RAPID ANTIGEN TEST AND CLINICAL SCORES

M Dominguez[1,7], J Lucey[1,8], R Musa[2], N Patrutescu[4], S McCormack[2], R Rush[3], P Jackman[5], I Okafor[4], R McNamara[4], C Blackburn[2], R Cunney[5], R Drew[5], KM Butler[1,6,7], **P Gavin[1,6]**
[1]Infectious Diseases, Our Lady's Children Hospital, Dublin,[2]Emergency, Our Lady's Children Hospital, Dublin, [3]Microbiology, Our Lady's Children Hospital, Dublin, [4]Emergency, Children University Hospital Temple Street, Dublin, [5]Microbiology, Children University Hospital Temple Street, Dublin, [6]Infectious Diseases, Children University Hospital Temple Street, Dublin, [7], University College , Dublin, [8], Trinity College , Dublin

Background
Clinical diagnosis of Group A streptococcus (GAS) tonsillitis/pharyngitis in children is very difficult. Throat swab bacterial culture is considered the gold-standard but results are not immediately available. Multiple clinical scores and Rapid Antigen Diagnostic Tests (RADT) have been developed to aid diagnosis but their use is not universally recommended. Recent audits in Paediatric Emergency Departments (ED) in Dublin show over-prescription of antimicrobial for tonsillitis/pharyngitis. Educational intervention alone has not resulted in a significant improvement in antimicrobial prescription rates.
Methods
A RADT was introduced in ED1, and simultaneously practice was audited in ED2 where a clinical score is used routinely. Diagnostic accuracy of the RADT and clinical score were compared to throat culture. Antimicrobial prescription rates were evaluated pre and post-introduction of the RADT.
Results
Antimicrobial prescription rate was significantly reduced in ED1 post-introduction of RADT 76% to 39% (p value <0.001) while the incidence of GAS remained stable. The reduction in antimicrobial prescription was most evident in <3 years, 55.6% to 25% (p value <0.001). In contrast, antimicrobial prescription rates in ED2 using a clinical score were unchanged (58%- 59%). RADT performance showed good sensitivity (85.2%) and specificity (95.6%), in antibiotic naïve children compared to culture. Individual clinical signs and symptoms, or their combination in clinical scores, were not predictive of positive throat swab cultures but did increase doctor's antimicrobial prescription rates. Clinical scores were calculated incorrectly in 84% of cases. Clinicians thought the RADT was useful and easy to use.
Conclusion
Use of a RADT for GAS decreased inappropriate antimicrobial prescription rates in a paediatric ED. In contrast clinical scores were associated with over-prescription of antimicrobials. RADTs can satisfy the clinicians need to treat GAS pharyngitis while promoting antimicrobial stewardship.
Shulman et al. Clin Infect Dis 2012, Pelucchi et al. Clin Microbiol Infect 2012, Ebell et al. JAMA 2000, Nussinovitch et al. Clin Pediatr 1999, McIssac et al. CMAJ 1998 and 2000

EXTUBATION FAILURE IN THE PAEDIATRIC INTENSIVE CARE UNIT: DO SECRETIONS MATTER?

P Donnelly[1], J Richardson[1], C Flannigan[1]
[1]Paediatric Intensive Care Unit, The Royal Belfast Hospital For Sick Children, Belfast, Northern Ireland

Aims: Within the Northern Ireland PICU the question was asked whether a child may fail extubation secondary to ETT secretions. The objective of this study is to review patients ETT secretions prior to a failed extubation in comparison to subsequent successful extubation. Each case is therefore matched in terms of disease aetiology/background which have previously been reported as potential risk factors for failed extubation [1].

Methods: A retrospective review was performed using safety brief data over a six month period from December 2015 until May 2016. Failed extubations are recorded as a 'reintubation within 48 hours'. This information was cross-referenced with electronic handovers to ensure all relevant patients were included. A proforma was completed for each patient documenting the ETT secretions immediately prior to extubation. These were assessed by the PICU physiotherapists and documented in terms of their quantity [mild (1), moderate (2) or severe (3)] and their quality [(mucoid (M), purulent (P), blood-stained (B), muco-purulent (MP), muco-bloody (MP)].

Results: Eleven failed extubations occurred in the six month period.

Secretions	Failed Extubation (%)	Successful Extubation (%)	% DIFFERENCE
1	3 (27)	0	-100%
2	6 (55)	10 (91)	+67%
3	2 (18)	1 (9)	-50%
M	8 (73)	7 (64)	-12.5%
P	0	0	-
B	0	0	-
MP	2 (18)	3 (27)	+50%
MB	1 (9)	1 (9)	-

The *quantity* and *quality* of secretions had no significant impact on the risk of failed extubation (p=0.115, p=0.875). Twenty seven percent of infants who failed extubation had mild secretions. One hundred percent of the successful extubations had moderate-severe secretions. There was no significant impact on the success of extubation if they were muco-purulent or muco-blood stained.

Conclusion: This study aims to address a question that is not addressed in the literature to date: do secretions have a role to play in failed extubations? This study suggests that secretions are not a significant independent risk factor for failed extubation and as such we should not prolong ventilation time purely for this reason. A larger prospective study of *all* extubations would give further clarity to assessing secretions as an independent risk factor for failed extubation.

1. Kurachek SC et al. Extubation failure in paediatric intensive care: A multiple-centre study of risk factors and outcomes. Crit Care Med Nov2003; 31(11): 2657-2664

HOW MUCH IS TOO MUCH? ESTABLISHING GOOD PRACTICE FOR DOCUMENTED CLINICAL REVIEW IN NORTHERN IRELAND'S TERIARY NEONATAL INTENSIVE CARE UNIT.

P Donnelly[1]
[1]Paediatric Intensive Care Unit, The Royal Belfast Hospital For Sick Children, Belfast, Northern Ireland

Background:
In Northern Ireland's (NI) tertiary neonatal unit there is no standard regarding how often a patient should have a documented review in their clinical notes. Ward rounds and handovers occur three times daily but this does not equate to documenting in clinical notes. No guidance was noted on review of the British Association of Perinatal Medicine (BAPM) standards.

Method:
A retrospective audit was performed reviewing medical notes for infants within the Neonatal Intensive Care Unit (NICU) from 5/1/16 to 8/1/16. The numbers of hours between the morning review and the preceding timed entry in the medical notes was noted. A specific neonatal registrar had an established individual practice of documenting in all intensive care patient notes during night shift. A re-audited was performed during these night shifts between 12/01/16 and 15/01/16 and any updates to management plan noted.

Results:
Notes were available for 20 neonates in the first period vs 21 neonates for the second period of review. The average number of hours between clinical documentation was 17.3 hours in the first cohort compared with 8.8 hours in the second cohort. Of the 21 neonates who were reviewed on a more frequent basis, thirteen had documented updated plans. These plans may have been made regardless of formal documentation.

Conclusion: It is felt that good practice would be to document in every intensive care patients' notes at least once per day and once per night shift. This will ensure that an on-going formal record of updated management plans is kept.

AN AUDIT OF THE MANAGEMENT OF CHRONIC HEPATITIS B INFECTION IN A PAEDIATRIC POPULATION

S Duignan[1], K Butler[1]
[1]Paediatric Infectious Disease, Our Lady's Children's Hospital, Crumlin, Ireland

Aims:

HBV prevalence in children in Ireland is low, however, inward migration from countries of high prevalence has resulted in a growing cohort of paediatric patients with chronic HBV (cHBV) infection. While up to 50% of infected children can develop a level of fibrosis in childhood, cirrhosis and hepatocellular carcinoma (HCC) are rare before adulthood.

Treatment of cHBV in children has been difficult given the poor response of children to interferon and the lack of effective licenced drugs for paediatric use. However, recent AASLD guidelines with expanded treatment recommendations, reflecting advances in paediatric drug development and licencing, are changing the therapeutic landscape.

We aimed to characterise the demographics of cHBV in children attending the Rainbow clinic, to audit cHBV treatment, specifically the clinical indications for its initiation, and to determine the number of patients who now meet the revised treatment criteria.

Methods:

HBV infected patients were identified through the Rainbow clinic database. All confirmed cases currently attending the Rainbow clinic were eligible for inclusion. A retrospective review of prospectively gathered data was carried out, supplemented by chart review.

Results:

Thirty-one patients were identified; 16 male (52%), median age 12 years (range 1- 18), 42% Asian, 32% African and 26% European. Genotypes included type A (13%), B (13%), C(10%), D (22%), E(16%) and not identified (19%). Two children had received HBV therapy because of early fibrosis. Only three additional treatment naïve patient that meet criteria for treatment consideration were identified.

Conclusion:

Notwithstanding the expansion in treatment indications, most cHBV paediatric patients are immune-tolerant and do not meet treatment criteria. A minority of children however, can progress to fibrosis, thus careful monitoring is warranted with consideration of antiviral therapy when treatment criteria are met.

PRACTICE OF INTRAVENOUS FLUID PRESCRIPTION AND MONITORING IN UNIVERSITY HOSPITAL LIMERICK : A CLINICAL AUDIT REPORT

E Dunne[1], B Ullah[1], MJ Mahony[1], AM Murphy[1]
[1]Paediatric Department, University Hospital Limerick, Limerick, Ireland.

AIM: To assess the current practice of intravenous fluid prescription and monitoring in the paediatric population in University Hospital Limerick as compared to the clinical guidelines outlined by Royal Children Hospital Melbourne, in order to improve the clinical practice

METHOD: A prospective review of data from the medication charts of paediatric inpatients who received intravenous fluids for a period of greater that 24 hours was perfromed. The study was perfromed over 30 days. Patients with electrolyte derangement, ongoing losses & complex medical issues were excluded. Documentation of the following was assessed; type of fluid, rate of administration, weight measurement and biochemical markers (prior to commencement of intravenous fluid). Documentation of daily weight, biochemical markers after 24 hours of intravenous fluid was recorded while documentation of total intake and output was also assessed. The data presented in figures and graphs.

RESULTS: Data from 30 patients was taken during the study period (n=30). 100% (n=30) concordance with recommendations prior to commencing intravenous fluids is reported. N=0 had daily weight recorded, n=0 has follow up biochemical markers 24 hours after intravenous fluids were commenced.

CONCLUSION: The audit demonstrates that the practice of intravenous fluid prescription is fully in keeping with the recommendations prior to commencement of fluid. However, there is scope for improvement in monitoring of paediatric patients following commencement of intravenous fluid therapy.

Royal Children Hospital Melbourne, Clinical Practice Guidelines,IV FLUIDS - for children beyond the newborn period, Available at http://www.rch.org.au/clinicalguide/guideline_index/Intravenous_Fluids/#Monitoring

A STONE TO LEAVE UNTURNED

E Dunne[1], E Ryan[1], MJ Mahony[1], S McGrane[2], B Kenny[2]
[1]Paediatric Department, University Hospital Limerick, Limerick, Ireland
[2]Radiology Department , University Hospital Limerick, Limerick, Ireland

Aim: The authors report a case of cholelithiasis occurring in an 18 month old female who was exposed to intravenous ceftriaxone for 5 days. Four weeks after ceftriaxone therapy, all but one stone had resolved.

Case report: An 18 month old female presented to the emergency department with high grade pyrexia and rigors. Bloods: White Cell Count 46.6, Neutrophils 41.7 CRP 120. Physical examination and investigations did not reveal a focus for infection. The patient was commenced on ceftriaxone as empirical treatment. Intermittent high grade pyrexia continued for 5 days. On day 5 an abdominal ultrasound was performed which demonstrated multiple gallbladder calculi within a normal thickness gallbladder. The appearance of the common bile duct was normal. The patient was discharged on day 7 having been apyrexial for 48 hours and clinically well. The patient re-presented 4 weeks later with high grade pyrexia. The patient was commenced on IV augmentin at presentation; gentamicin was added on day 3. Repeat abdominal ultrasound demonstrated resolution of all but one echogenic focus in the gallbladder. Ulstrasound of the abdomen at 8 weeks demonstrated complete resolution of the calculi.

Discussion: Cholelithiasis and choledocholithiasis were considered to be uncommon in infants and children but have been increasingly diagnosed in recent years due to the wide- spread use of ultrasonography.[1] Ceftriaxone induced cholelithiasis is an uncommon but recognized side effect of therapy and tends to resolve with cessation of therapy.[2] In the paediatric population, where gallstones are uncommon, paediatricians and radiologists need to be aware of this association in order to avoid unnecessary intervention.[3]

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CHROMOSOME 16p13.11 DELETION ; A CASE REPORT

Dunne E[1], Murphy AM[1], O'Mahony E[1], Mahony M[1].
[1]Paediatric Department, University Hospital Limerick, Co. Limerick, Ireland.

AIM: To describe the phenotypical presentation and management of a male infant with chromosome 16p13.11 deletion.

METHOD: Retrospective chart review was perormed on a patient at University Hospital Limerick with Chromosome 16p13.11 deletion.

RESULTS: Deletion of chromosome 16p13.11 has a recognised association with neurodevelopmental disorders and epilepsy, however deletions in this region have also been detected in phenotypically normal individuals.[1] There is a large phenotypic variation in individuals with known chromosome 16p13.11 deletion.[2] Chromosome 16p13.11 deletion has been identified as the single most common genetic risk factor for development of seizures.[2-3]

This case describes a male infant who presented to the paediatric outreach clinic at aged 13 months with motor developmental delay and faltering growth associated with vomiting. An occipital mass was noted since 3 months of age. There is no family history of note. Chormosome 16p13.11 deletion was confirmed by CGH array. EEG shows a possible reduced seizure threshold in the sleep state. The patient has not presented with a clinical seizure to date.

CONCLUSION:

This case highlights the phenotypical presentation and development to date of a patient with chromosome 16p13.11 deletion in University Hospital Limerick, adding to the current body of evidence regarding this condition.

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SCN1A DE NOVO MUTATION; A CASE SERIES

Dunne E[1], Murphy AM[1], O'Mahony E[1], Mahony M[1], Departments; [1]Paediatric Department
University Hospital Limerick, Co. Limerick, Ireland.

AIM: To describe the phenotypical presentation and complex management of two paediatric patients with confirmed SCN1A gene mutation.

METHOD: Retrospective chart review was performed on two patients at University Hospital Limerick with confirmed SCN1A mutation.

RESULTS: Mutations in the neuronal sodium channel alpha-subunit (*SCN1A*) gene have been documented in a spectrum of epilepsy syndromes, ranging from the relatively benign generalized epilepsy with febrile seizures plus (GEFS$^+$) to severe myoclonic epilepsy in infancy (SMEI). Over 300 new mutations have been identified to date, however there a strong correlation between genotype-phenotype has not yet been described in the literature[1].

The phenotypical mode of presentation for SCN1A gene mutation is that of complex febrile convulsions within the first year of life in an otherwise healthy infant. These convulsions can be triggered initially by fever, intercurrent illness or commonly, routine vaccination[2]. Multi-drug therapy is required for seizure control, however, a number of anti-epileptic drugs are contraindicated in sodium channelopathies, further complicating effective management of the condition.

Case 1 describes a female infant, presenting at 4 months of age with prolonged seizures directly after her second set of immunizations. Case 2 describes a male infant, presenting at 9 months with prolonged febrile convulsions and concurrent tonsillitis. The clinical course of these patients, aswel as complex management of intractible seizures over 2 years is described.

CONCLUSION:
This case series highlights the phenotypical presentation, natural history and complex management issues of two paediatric patients with de novo SCN1A mutation in University Hospital Limerick.
Early recognition of this condition is important, as aggressive seizure control with anti-epileptic medications may improve long term outcome[3].

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SEVERE TRAUMATIC BRAIN INJURY: A CASE REPORT

T Durrigan[1], S Durnin[2 3], C Gibbons[2 3]
[1]UCD School of Medicine & Medical Sciences, University College Dublin, Dublin, Ireland
[2]Paediatric Intensive Care Unit, Children's University Hospital , Dublin, Ireland
[3], Irish Paediatric Acute Transport Service, ,

Aim:
To highlight the importance of effective resuscitation and neuroprotective strategies in the early management of a severe traumatic brain injury.

Introduction:
Paediatric traumatic brain injury causes significant morbidity and mortality.[1] We describe a severe traumatic brain injury (TBI) as a result of a farming accident.

Case Report:
An 8-year-old girl fell from the wheel-arch of a tractor and suffered extensive crush injuries. On-scene, paramedics noted a Glasgow Coma Scale of 4 and proceded to intubate. She underwent intraosseous cannulation, fluid resuscitation, tranexamic acid bolus and needle chest decompression of a pneumothorax. She was transferred 50Km by air by the Emergency Aeromedical Support Service to a regional emergency department (ED). A whole body computed tomography was completed within two hours of the injury. This showed multiple depressed occipital bone fractures, a subdural hematoma, cerebral oedema, left sided pneumothorax, and multiple rib and facial bone fractures. ED management included resuscitation with packed red cells and intravenous fluids for hypotension, mannitol, sedation and ventilation. Based on her injuries, she had a 55.4% risk of 14-day mortality and an 80.6% risk of unfavourable outcome at 6-months.[2]

She was later transferred by the Irish Paediatric Acute transport Service a paediatric intensive care unit, where neuroprotective strategies were escalated to include: intracranial pressure (ICP) monitoring, sedation with inhalational anaesthetics, and inotropic support. Her ICP was as high as 75mmHg and refractory to treatment. She remained in an induced coma for 6 days but made a slow recovery. MRI brain demonstrated a significant infarct of the right fronto-parietal region, however she was discharged with minimal deficits and her Pediatric Cerebral Performance Category Scale[3] was 2 at eight weeks.

Conclusion:
Early, effective management, beginning with pre-hospital and ED resuscitation, focusing on neuroprotective strategies, contributed to a very positive outcome in what was initially thought likely to be a fatal head injury.

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ACUTE PAEDIATRIC METHADONE CEREBELLITIS: A CASE REPORT & SYSTEMATIC REVIEW OF THE LITERATURE

L Falcone[1], C O'Brien[2], MJ Barrett[1], D Rea[2], C Blackburn[1], SM O'Donnell[1], S Walsh[1]
[1]Department of Emergency Medicine, Our Lady's Children's Hospital, Crumlin, Dublin, Ireland
[2]Department of Radiology, Our Lady's Children's Hospital, Crumlin, Dublin, Ireland

Introduction

From 2005 to 2015, 13 enquires to the National Poisons Centre, Ireland, related to methadone ingestion in children under 10, with no fatalities on record.

Aim

To report the case of a girl with methadone-induced cerebellitis and to systematically review the pediatric literature.

Methods

We searched MEDLINE, EMBASE and CINAHL Plus from 1966 to May 2016 with no language restrictions. We used the search terms 'methadone' and 'cerebellitis' and restricted the search to patients under 18 years of age.

Results

We present a fatal case of methadone-induced acute cerebellitis. The systematic review identified 8 case reports of acute methadone-induced cerebellitis, 5 male and 3 female, of which 6 were of pre-school age (less than 5 years old) and 2 were teenagers. In all cases, patients were unresponsive and unconscious with respiratory compromise. Six had abnormal pupillary responses, and in a single case, methadone ingestion was known to have occurred 6 hours prior to attendance. CT findings within 24 hours of presentation included hypointensities of cerebellar hemispheres, cerebellar hypoattenuation, and diffuse cerebellar swelling consistent with cerebellitis. A single case reported an initial normal CT, however repeat CT day 1 revealed acute cerebellitis.

Results

Emergent CT is currently the quickest and most readily available neuroimaging modality in most settings. Acute cerebellitis should prompt physicians and radiologists to consider methadone (opioid) toxicity. We report the youngest case to date with these findings, and the first described in Ireland.

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EXPERIENCE OF WEANING CHILDREN WITH CONGENITAL CARDIAC DISEASE FROM NASOGASTRIC TUBE FEEDING IN A TERTIARY CARE PAEDIATRIC CARDIOLOGY UNIT

D Finn[1], AM Brennan[1, 2], N Byrne[1, 2], CM Mc Mahon[1]
[1]Paediatric Cardiology, Our ladys' Childrens' Hospital Crumlin, Dublin 12
[2]Department of Nutrition, Our ladys' Childrens' Hospital Crumlin, Dublin 12

Background: There are limited data on weaning protocols and success for children with congenital heart disease who are dependent on nasogastric feeding prior to surgical intervention.

Methods: We retrospectively reviewed all children with congenital heart disease over a ten month period from July 2014 to May 2015 to assess our experience with weaning off nasogastric tube feeding.

Results: There were 54 children included in the study. The diagnoses included atrioventricular septal defect in children (53%), univentricular circulation in children (27%), ventricular septal defect (20%) and tetralogy of fallot (3%). The median age at initiation of NG tube feeding was 45 days of life (2-169 range). The median duration was 202 days (56-669 range) and weaning duration from NGT feeding was 52 day median (range 2-396). Ten infants (18.5%) developed oral aversion. Eighty three percent maintained their growth or increased growth velocity within a month of weaning. Longer NG feeding times, and later age at weaning were both associated with longer weaning times (Figure 1 and 2).

Conclusions: NG tube feeding may be necessary for adequate weight gain prior to cardiac surgery. Weaning is possible with adequate weight gain following surgery. However, it is associated with long weaning times and oral aversion in some cases, especially infants who have been NG fed for longer and are older when weaning is attempted.

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DEFINING THE REFERENCE RANGES FOR RESPIRATORY RATES, TIDAL VOLUMES AND END TIDAL CO_2 IN HEALTHY TERM INFANTS FOLLOWING CAESAREAN DELIVERY

D Finn[1], J DeMuelemeester[1], L Dann[1], V Livingstone[1], GB Boylan[1], CA Ryan[1], EM Dempsey[1]
[1]INFANT Research Centre, University College Cork, Cork University Maternity Hospital, Cork, Ireland

Background and aim:
A comprehensive knowledge of respiratory physiological parameters during new born adaptation is lacking. The aim of this study was to document reference values for respiratory rate (RR), tidal volume (TV) and end tidal carbon dioxide (EtCO2) in term infants during the first minutes of life following caesarean delivery (CD).

Methods:
We obtained measurements following elective CD in infants > 37 weeks gestation. A Respironics NM3 Monitor (Philips, Netherlands) continuously measured RR, TV, and EtCO2 for 10 minutes. A mixed modelling approach was used to estimate the trajectories of each feature (RR, TV and $EtCO_2$) for every minute of the recording. For each feature, the predicted values from the best-fitting mixed model and their corresponding standard errors were used to construct a 95% reference range.

Results:
One hundred and four term infants born by elective CD were recruited. Median gestation was 39 weeks and median birth weight 3420g. Median time from cord clamping to resuscitaire and initiation of monitoring was 26.5 (range: 20-39) seconds. Mean RR increased for each time point between 1 minute (44.66) and 7 minutes (61.72). Mean TV and ECO_2 increased over the first 3 minutes (17.57mls- 21.52mls, and 4.37kPa-5.69kPa respectively), and then stabilised (Figures 1-2).

Conclusion
This study provides valuable reference values for RR, TV and EtCO2 following elective CD in healthy term infants. TV and $EtCO_2$ increase significantly over the first few minutes of life before stabilising.

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BRAIN ACTIVITY IN THE FIRST 10 MINUTES OF LIFE

D Finn[I], J O'Toole[1], CA Ryan[1], EM Dempsey[1], GB Boylan[1]
[1]INFANT Research Centre, University College Cork, Cork, Ireland

Aims:
Multichannel electroencephalography (EEG) is increasingly being performed in infants following perinatal asphyxia. Eligibility for therapeutic hypothermia must be decided before 6 hours of age. However, much of what we know about neonatal EEG is based on recordings performed after 6 hours of age, or in unwell infants. This study aims, for the first time, to assess brain activity in the immediate newborn period in healthy full term newborns.

Methods:
We obtained EEG recordings in term infants following elective caesarean delivery (CD). After delivery, the skin was prepared using an alcohol wipe and conductive gel. 5 disposable flat surfaced EEG electrodes were then attached to the infants scalp over frontal and central regions bilaterally using the 10-20 system of electrode placement and recorded for 10 minutes. Both visual and quantitative analyses were performed.

Results:
Fifty infants were recruited. Median age at time of initial EEG recording was 3 minutes (2.5- 3.75). Good quality continuous mixed frequency EEG activity was seen in all infants with a range of 30-50uV. Movement artefact contaminated many recordings but EEG activity was measurable for a minimum of 3 minutes in all infants. Results of quantitative analyses can be seen in Table 1.

Conclusion:
EEG recording is feasible in the immediate new born period and this study provides valuable reference values for healthy term infants during this vulnerable time period, which may have practical implications for assessing babies following perinatal asphyxia in the future.

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ARE TRANSCUTANEOUS BILIRUBIN MEASUREMENTS ACCURATE IN INFANTS AFTER THE FIRST 72 HOURS OF LIFE?

J Finnegan [1], A El-Khuffash[1], D Corcoran[1]
[1]Department of Neonatology, Rotunda Hospital, Dublin, Ireland

Aims

This research aimed to establish the accuracy of transcutaneous bilimeters (TcB) when used in infants over 72 hours of age and at a range of over 200µmol/L. We aimed to identify if potentially unnecessary phlebotomy is performed to confirm TcB readings over 200µmol/L; with a further aim to establish the accuracy of TcB readings, compared to a serum bilirubin (SBR) level in infants between 72 and 120 hours of age.

Methods

Data was collected retrospectively from case note analysis of patients who attended POPD for assessment of jaundice over a four month period (March - June 2015). Infants aged 72 hours or greater with a gestation 35 weeks and above were included.

Sample size included 40 neonates who had TcB and SBR measurements. Descriptive statistics were used to present the data as means ± standard deviation if normally distributed, or medians [inter-quartile ranges] if skewed. Agreement between TcB and SBR readings was assessed using Bland Altman Analysis.

Results

Paired readings (TcB + SBR) were obtained from 40 patients at a median time of 93 hours [80 – 97]. Their median gestation was 39.0 weeks [38.2 – 39.6]. The mean TcB for the entire group was 266 ± 34 µmol/L (range 207 – 339), the mean corresponding SBR was 253 ± 34 (range 204 – 320).

Conclusions

TcB results overestimated SBR measurements, particularly in TcB readings greater than 250µmol/L. In TcB readings between 200 and 250µmol/L, the mean difference between readings was -0.61, indicating that TcB values are accurate in this range. As sample size was small for readings >250µmol/L, it is recommended that further audit be carried out in this data set before changes to current guidelines could be introduced.

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SCREENING NEWBORN INFANTS ≥ 35 WEEK'S GESTATION FOR EARLY ONSET SEPSIS AT THE NATIONAL MATERNITY HOSPITAL (NMH)

R Finnegan[1], LK McCarthy[1], S Knowles[1], A Twomey[1]
[1]Department of Neonatology, National Maternity Hospital, Dublin, Ireland

Aims

- To assess adherence by medical staff to the NMH sepsis evaluation protocol
- To determine how effective screening criteria are at detecting early onset sepsis (EOS) in newborns ≥ 35 weeks' gestation

Methods

Prospective audit of infants born between 1/2/16 and 1/5/16 that had an evaluation for EOS within 48 hours of birth. Infant data including indication for septic work-up were collected using a pro forma completed by medical staff following each evaluation; and compared to the protocol. The laboratory database was used to review the results of all blood cultures performed on eligible infants.

Results

In three months 274 (13%) infants ≥ 35 weeks' had a septic work-up within 48 hours of birth at NMH. Audit forms were completed on 164 (60%) of eligible infants. Ninety-three percent (153) infants were screened according to the protocol. The majority of septic work-ups were performed on asymptomatic infants (129 [79%]). The most common indication for evaluation was maternal pyrexia (101[78%]) during labour (65%) or within 4 hours of birth.

Two infants(2/274) had culture positive EOS. A further 13 infants were treated for > 48 hours with antibiotics for presumed EOS despite negative blood cultures based on clinical symptoms and/or inflammatory markers. To our knowledge only one infant that did not meet screening criteria presented within 48 hours of birth with culture positive sepsis.

Conclusions

A large proportion of infants' ≥ 35 weeks at NMH are evaluated for EOS. This is time consuming, separates mother and infant and is not risk free. Adherence by medical staff to the protocol is high, the number of screened infants with EOS is low but when the screening criteria are applied few infants with EOS are missed.

PERINATAL MANAGEMENT OF PRENATALLY-IDENTIFIED DUCTAL DEPENDENT CONGENITAL HEART DISEASE

E Fitzgerald[1], G McGauran[1], J Walsh[2], C Breatnach[1], A EL-Khuffash[3], O Franklin[3], F Breathnach[2]
[1]Department of Neonatology, Rotunda Hospital, Dublin, Ireland
[2]Department of Obstetrics and Gynaecology, Royal College of Surgeons in Ireland, Dublin, Ireland
[3]Department of Paediatrics, Royal College of Surgeons in Ireland, Dublin, Ireland
[4]Department Paediatric Cardiology, Our Lady's Children's Hospital, Dublin, Ireland

Aims: Prenatal identification of congenital heart disease (CHD) facilitates optimised management in the early neonatal period. Transfer to a specialist cardiac centre during working hours when key services are available may determine outcomes, particularly for infants with ductal dependent lesions (ddCHD). In a tertiary referral perinatology centre, we aimed to assess whether the timing and mode of delivery of infants with known ddCHD has an impact on the time to transfer to a paediatric cardiac centre.

Methods: A consecutive cohort of 34981 deliveries was retrospectively reviewed for all cases of prenatally-identified ddCHD between 2012 and 2015. All live births with antenatally detected ddCHD were included.

Results: 28 infants with ddCHD and a median [IQR] gestation and birth weight of 38.7 [37.9–39.3] weeks and 3.0 [2.6–3.3] Kg were identified. 13 (46%) were delivered by caesarean section (CS) and 13 (46%) were delivered out of hours. Vaginal birth (VB) was more likely to occur out of hours [12/15 (80%) VB vs. 1/13 (8%) CS, $p<0.001$]. The median time to transfer to a cardiac centre was 2.9 [2.2 – 5.0] hours. The median pre-transfer pH, lactate and mean BP were 7.34 [7.7.31–7.37], 2.5 [1.5–4.4] mmol/l, and 43 [37–55] mmHg. Out of hours birth did not have a negative influence on any of those parameters (all $p>0.05$).

Conclusion: Planned delivery of infants with ddCHD via CS facilitates birth during working hours. Although out of hours birth does not negatively influence prenatal management, the more readily available services in the cardiac centre during working hours should be taken into consideration.

CONTROVERSIES IN DIAGNOSIS IN AUTISM SPECTRUM DISORDERS WITH COMORBIDITIES

Prof Fitzgerald [1]
[1]Psychiatry , Trinity College , Dublin , Ireland
[2]Gheel Autism Centre, Gheel Autism Centre, Fairview Dublin , Ireland

Aim

To review from the mid twentieth century the controversies in diagnosis of Autism and this continues to today. NICE (2012) does not recommend a specific diagnostic instrument and this is a common misunderstanding. The diagnosis is a clinical diagnosis.

Method

This papers focuses on the history and the road to DSM V Autism and pays particular attention to the comorbidities which can be missed. Unfortunately, a number of the most widely used Autism instruments use in Ireland under diagnose ASD which huge distress to parents, frustrated teachers and professionals.

Conclusion

This is so unnecessary as the papers will show.

Fitzgerald M (ED)(2015) AUTISM SPECTRUM DISORDERS RECENT ADVANCES INTECH PUBLISHERS
MCCARTHY P, FITZGERALD, M SMITH M (1984) PREVALENCE OF CHILDHOOD AUTISM IN IRELAND, IRISH MEDICAL JOURNAL 77, 5,129-130 www.professormichaelfitzgerald.eu

A RETROSPECTIVE AUDIT OF EVALUATION FOR GENERAL ANAESTHETIC RELATED ALLERGIC REACTIONS AT OUR LADY'S CHILDREN'S HOSPITAL CRUMLIN (OLCHC)

S Fitzgerald[1], A Byrne[2]
[1]Allergy Department, OLCHC, Dublin, Ireland
[2]Allergy Department, OLCHC, Dublin , Ireland

AIMS

The incidence of anaphylaxis during general anaesthesia is 1:10,000 to 1:20,000. It is imperative that potential cases are investigated thoroughly. The allergy department at OLCHC has been providing a service since January 2014. The aims of this audit were to evaluate the appropriateness and completeness of referrals, and to audit performance against guidelines.

METHODS

Patients evaluated for general anaesthetic related allergic reactions were identified via departmental database. Theatre records, referral letters & case notes for each patient were then reviewed.

RESULTS

Between August 2013 and December 2015 there were 7 referrals, aged between 5-13yr at the time of the reaction. 6 were referred by anaesthetic teams and 1from A&E. Only 3 were referred with our standardised proforma completed. Evaluation required 13 attendances and 3 drug challenges. All 7 had skin prick testing, and 4 also had intradermal testing. 7 had latex and chlorhexidine skin test.
2 cases were definitively proven to have a drug allergy (atracurium and vancomycin). Both had had raised tryptase levels and received adrenaline perioperatively. 2 cases were diagnosed as morphine induced histamine release. 2 cases were concluded not to have been allergic reactions: One was due to aspiration at the time of intubation and the other was deemed unrelated to the anaesthetic. Investigations into one case have been inconclusive to date and a final drug challenge is pending.

CONCLUSIONS

It is essential that all information is provided in standardised manner. Further communication with potential referring centres is essential. Evaluation is timely but effective. In the future, referrals should be carefully screened to prevent inappropriate cases being evaluated. Perioperative collapse, administration of adrenaline and a raised tryptase make a drug reaction more likely. Key elements of the work up including latex and chlorohexidine testing are being achieve. Intradermal testing is well tolerated in our service.

BSACI guidelines for the investigation of suspected anaphylaxis during general anaesthesiaP. W. Ewan,P. Dugué,R. Mirakian,T. A. Dixon,J. N. Harper, S. M. Nasser

COELIACE DISEASE IN AN IRISH TERTIARY REFERRAL CENTRE: A CHANGING PRESENTATION?

H Fitzpatrick[1], S Quinn[1], J O Driscoll[2]
[1]Department of paediatric gastroenterology, Adelaide and meath hospital incorporating national children hospital, Tallaght
[2]Department of paediatric gastroenterology, Adelaide and meath hospital incorporating national children hospital, Tallaght
[3]Dietetics department, Adelaide and meath hospital incorporating national children hospital, Tallaght

Aims:
Literature suggests a changing paediatric presentation of coeliac disease.
To evaluate this in an Irish setting, we looked at our coeliac patient cohort who were linked with the dietetics service in our tertiary referral centre over a six year period.

Methods:
Data was obtained from 195 patients,identified through our prospective dietetics database. Patients either had Screening reasons included failure to thrive(n=17),Low iron(n=19). Gastrointestinal symptoms were highly reported with Vomiting (n=31), abdominal pain(n=135),constipation(n=60), diarrhoea (n=76).

Results:
Diagnostic bloods and biopsies in this group were as follows:

Of note, the patients with a positive biopsy with TtG < 7 (n=19) presented with gastrointestinal complaints: diarrhoea(n=13), constipation(n=10) abdominal pain(n=14) and vomiting(n=1)often a combination.

Anthropometry at diagnosis (n=132, %) revealed BMI average of 17.85. Considering BMI variances this places our children within normal-higher ranges. BMI centiles were obtained in 123 (62%) findings are as follows:

Based on this initial data we conducted a chart review on our biopsy positive patients over an 18 month period.

Anthropometry again showed healthy weights, with BMI calculated in 45%(n=25), the average of which was 15.655. Weight centiles showed highest distribution in the 50-75th centile (n=10)and 90-98th(n=8).

Interestingly pre-diagnosis 32%of this group were documented to have Gastrointestinal symptoms. TTG was elevated in 90%, indicating high level of opportunistic screening.

Conclusions
The majority of our patients demonstrated a normal-high BMI.
Gastrointestinal complaints are more prominent post diagnosis, p
Only one patient had negative biopsies with tTg > 70. This patient would have been excluded from biopsy based on current NICE guidelines.

COPYING LETTERS TO PARENTS- A MODEL OF GOOD PRACTICE?

H Fitzpatrick[1], A Sokay[1], J McBrien[1]
[1]Paediatric department, Midlands Regional Hospital, portlaoise, Portlaoise, Ireland

Background:In our service, it is standard practice to copy OPD letters of children with complex medical needs to parents/guardians. There is currently no Irish guidance or research guiding this practice.

Aims:

1. To assess parental thoughts on copying letters for children with complex medical needs.
2. To test letter readability. Readability is the ease with which a written text can be understood by a reader.

Methods: A questionnaire was sent to all parents of 32 children attending a disability school. Responses were collated to ascertain parental attitudes. To examine readability, electronic copies of clinic letters were obtained, and the body of the text analysed using Flesch-Kinard tests of readability.

Results: There was an 87% response rate (n=27). 100% (n=27) found letters helpful, especially for providing information, and communicating with other medical teams (100%). 88% found it useful for other service request. Other comments included “Good for future observation” “Good as it is often forgotten what is discussed at clinic”. Whilst 15% (n=4) noted they found letters difficult to understand, only one noted letters contained too much information. No parent felt the letters invaded their privacy. Readability was reviewed in 42% (n=14). Average Flesch reading ease was 60.16, i.e. plain English - “easily understood by 13-15 yo” level. Consultants letters accounted for 70% of those analysed, with NCHDs making up remainder. Average consultant readability was 57, with NCHD of 66. This indicates that the use of parent-friendly language can be achieved by all staff grades.

Conclusion: Parents were very satisfied with the practice and the content of the letters. All requested that the practice continues. In UK copying letters to patients/parents is recommended.(1) The findings of our study endorse this practice, and should prompt discussion of widespread implementation of parental letters. Correspondence should be written clearly, avoiding unnecessarily complex language, (1)

1: UK Department of health good practice guidelines

WHEN BREAST ISN' BEST

H Fitzpatrick[1], S [1]Department of paediatric gastroenterology, Adelaide and Meath hospital incorporating national children hospital, Tallaght
[2]Department of paediatric gastroenterology, Adelaide and Meath hospital incorporating national children hospital, Tallaght
[3]Department of dietetics, Adelaide and Meath hospital incorporating national children hospital, Tallaght

Aim: To describe a case of iron deficiency anaemia presenting with dental caries.
Specialist assessment of a 15 month old male was prompted when his teeth were noted to become "rough" on a background of a nine month history of discolouration. He was otherwise well, described by his parents as "always" being pale. Pica was suggested with occasional interest in ingesting stones and dirt. Dietary review noted almost continuous and exclusive breast feeding both day and night. Meals were usually refused in favour of breast.

Results:
On examination there was subconjunctival, palmar and facial pallor. He was haemodynamically stable. He was slim (weight and height on the 9thcentile). Routine bloods revealed a hypochromic microcytic anaemia with a haemoglobin of 6.3 g/dl, mean corpuscular volume of 53.4 fl.
On dental review, the classical pattern of caries in the upper primary teeth with loss of enamel was noted. Breastmilk contains 8% lactose and high frequency / prolonged breastfeeding allows plaque accumulation on the teeth with impaired oral clearance causing demineralisation of the enamel. (Figure 1A and B). His mother was advised about appropriate oral hygiene and reduced frequency of breastfeeding while establishing good feeding habits. He was discharged home on elemental iron 6mg/kg/day supplementation. Two weeks later his hemoglobin had improved to 8.0 g/dl. This continued to improve on subsequent follow up.

Discussion:
Iron deficiency is a known complication of prolonged breast feeding, with WHO guidelines recommending supplemental solid introduction at six months of age. This case highlights the subtlety with which iron deficiency may present, and the importance of medical professional awareness. (1)
Caries are also associated with prolonged frequent breast feeding (2) and should trigger a thorough dental and dietary review.

1: Griffin IJ1, Abrams SA (2001) Iron and breastfeeding. Pediatrics clinical north america,Apr;48(2):401-13.
2: Valets R et al (2000) A systematic review of the relationship between breastfeeding and early childhood caries, Canadian Journal of Public Health91.6

INCIDENCE OF PYRIMIDINE DEGRADATION DISORDERS IN IRELAND: IS IT TIME FOR GUIDELINES ON SCREENING FOR 5-FLUOROURACIL (5-FU) TOXICITY?

PE Fitzsimons[1], I Borovickova[1], G Urbano[1], AA Monavari[2], PD Mayne[1]
[1]Department of Paediatric Laboratory Medicine, Temple Street, Children's University Hospital , Dublin 1, Ireland
[2]National Centre for Inherited Metabolic Disorders, Temple Street, Children's University Hospital , Dublin 1, Ireland

AIM:
Fluoropyrimidines, such as 5-FU, are commonly prescribed chemotherapeutic agents. Fluoropyrimidines, are metabolised by Dihydropyrimidine dehydrogenase (DPD), the first of three enzymes in the pyrimidine catabolic pathway; reduced or absent activity of this enzyme can result in severe symptoms such as myelosuppression, mucositis, neurotoxicity, diarrhoea and sometimes fatal toxicity. Patients with complete or partial Dihydropyrimidinase (DHP) or beta-Ureidopropionase (β-UP) deficiency are also at risk. We aim to determine the incidence and carrier frequency of this group of disorders in Ireland and whether screening prior to 5-FU treatment is warranted.

METHODS:
A 20 year retrospective review of patients diagnosed with pyrimidine catabolic defects initially by urinary organic acid analysis.

RESULTS:
Six individuals from five families were diagnosed with DPD deficiency, one with DHP deficiency and four from two families with β-UP deficiency. Presentation shows phenotypic heterogeneity; two, possibly incidentally during hypoglycaemic work-ups, three during family screening and others during seizure, failure to thrive or autism work-ups.
Based on this review the incidence of pyrimidine degradation disorders in Ireland is 1:160,000 with a carrier frequency of 1:200.

CONCLUSIONS:
Pyrimidine degradation disorders are individually rare; 11 individuals from 8 families were identified with a deficiency in one of the three enzymes involved in pyrimidine catabolism over the 20 year period. There is no consensus in Ireland or Europe on routine testing for a pyrimidine degradation disorder in patients prior to receiving fluoropyrimidines. DPD levels show high inter- and intra-individual variation; this variability is likely to influence response to 5-FU with respect to toxicity, resistance and efficacy. Identification of individuals with defects in pyrimidine catabolism could realize personalized medication in cancer chemotherapy with pyrimidine analogs; however, when there is conflicting genotype-phenotype relations should screening be genetic, biochemical or a combination approach?

ADVERSE RESPIRATORY AND CARIAC EVENTS IN INFANTS WITHIN 24 HOURS OF VACCINATION

D Foley, H Cary, J Kelleher
[1]Department of Neonatology, Coombe Women and Children's Hospital, Dublin, Ireland
[2]Department of Neonatology, Coombe Women and Children's Hospital, Dublin, Ireland
[3]Department of Neonatology, Coombe Women and Children's Hospital, Dublin, Ireland

AIMS
Research has suggested that neonates and young babies may be at higher risk of adverse cardiac and respiratory events in the 24 hours following vaccination. This is of increased importance in vulnerable premature and low birth weight infants. Our aim was to assess adverse events in infants in the 24 hours following vaccination and subsequent management; and to compare this with national and international data.

METHODS
We obtained a list of eligible infants vaccinated in 2015 from our pharmacy department. We analysed data from these charts including – 1) type of vaccination 2) sex 3) birth-weight 4) corrected gestational age at time of vaccination 5) baseline in 24 hours pre-vaccination 6) type of adverse event 7) management of adverse event (stimulation, IPPV ,etc).

RESULTS
Of n=38 patients receiving 6-in-1 vaccination, mean age of vaccination was 79.8 days of life, and mean corrected gestational age was 35.8 weeks gestation. N=10 (26.3%) of these patients suffered a new adverse event. N=8 (21%) patients suffered apnoea, desaturations and bradycardias, and n=2 (5.3%) patients suffered from apnoea or desaturation alone. Main modes of management were stimulation (90%, n=9), oxygen (40%, n=4) or IPPV (50%, n=5). No patients required CPR or intubation and ventilation. Of infants receiving the hepatitis B vaccine (n=66), only n=1 (1.5%) patients suffered an adverse event following vaccination.

CONCLUSION
Though over 26% of babies suffered a new adverse event in the 24 hours following 6-in-1 vaccination, we must also take into account the young corrected gestational age of such babies, associated co-morbidities, and the potential benefits of delaying vaccination in certain cases. We have since created a post vaccination protocol of monitoring patients in the 24 hours following vaccination, ensuring patients are stable for discharge -to minimize the risk of adverse events at home.

BRONCHIOLITIS MANAGEMENT IN A PAEDIATRIC EMERGENCY DEPARTMENT

C Fox[1], T Bolger[1], S Koe[1], C Martin[1]
[1]Paediatric Emergency Department, The National Children's Hospital, Tallaght, Dublin, Ireland

Aim:
Bronchiolitis is a common presentation to the ED. Our aim was to educate NCHD's in our department about bronchiolitis and to assess and improve our management. We were interested to see any improvements from our 2013 audit.

Methods:
We analysed a group of 108 patients who had a diagnosis of bronchiolitis. All patients were under one year of age and presented to ED during December 2016. NCHD's were asked to read bronchiolitis guidelines and teaching sessions were provided.
We analysed proportion of patients receiving hypertonic saline, patients admitted, documentation of history and examination, patients who had chest x-ray, received antibiotics and any inappropriate nebulisation.

Results:
21% of patients were treated with hypertonic-saline. Of these, 87% were admitted. This shows an improvement from 2013 when 34% received hypertonic-saline but only 55% of those were admitted.
70% who were given hypertonic-saline had work of breathing documented as moderate or severe.
Documentation of feeding was excellent. (>98%)
15 children had a chest x-ray in the emergency department. All of these children were febrile and LRTI was suspected.
14 patients had SPO2 > 94% in triage. Of these, 12 were admitted and 8 were given hypertonic-saline. This is in keeping with results from 2013.
22 patients were given nebulised treatments other than 3% hypertonic-saline. 2 patients were given salbutamol as they were nearly 12 months and had strong family history of asthma. 20 patients were given normal-saline nebs.

Conclusions:
There was an improvement in use of hypertonic -saline. The majority of patients receiving this were admitted. This shows that it is used appropriately as the majority of patients had moderate to severe respiratory distress. Documentation in notes is excellent.
20 patients in this group received normal-saline nebs. These children had all been seen by the same NCHD. It is important to provide further education to NCHD's and ensure understanding of this common illness prior to next winter.

Poster No.50

PARENTS' PRIORITIES IN CARING FOR CHILDREN WITH LIFE LIMITING CONDITIONS NEARING END OF LIFE AT HOME, A RETROSPECTIVE QUALITATIVE ANALYSIS

S Staff[1], H Noonan[2], M Mannix[3], KI Quintyne[3], P Doyle[3], M Naughton[4], J Holmes[1], M. Conroy[1,5], S Gallagher[2,5]

1. Milford Care Centre, Limerick
2. Department of Paediatrics, University Hospital Limerick (UHL), Limerick
3. Department of Public Health, HSE Mid-West, Limerick
4. The Jack and Jill Foundation, Kildare
5. Graduate Entry Medical School, University of Limerick, Limerick

Paediatric palliative care needs a flexible coordinated and collaborative team approach that can respond to the changing needs of the child and family, particularly at end-of-life. As a service development initiative, a steering group of senior professionals identified bereaved parents' experiences as essential in developing an integrated and progressive children's palliative care service for end-of-life care at home.

Aims

The study sought to identify elements of current service availability, delivery and coordination valued by parents when their child was nearing end-of-life at home.

Methods

A retrospective qualitative study with purposeful sampling of bereaved parents was conducted. All parents were bereaved at least 6 months to a maximum of 36 months. Semi structured interviews were carried out with an interview guide. Interviews were digitally recorded and transcribed verbatim. Transcript data was entered into Nvivo for analysis. Data was analysed using a thematic approach by two researchers.

Results

8 bereaved parents of 5 children who died at home were interviewed

Priorities identified

- Availability of skilled professionals familiar with their child
- Communication between key worker, parents and professionals
- Key worker with links to acute paediatric services
- Out of hours support
- Hands on care by skilled nurses at end of life
- Bereavement support staring prior to the death of the child was helpful

Independent of the individual circumstances, these priorities were universal and recurrently referenced by parents.

Conclusion

This study identifies parents' priorities for service provision in caring for children at end-of-life at home. Key areas for service development are highlighted to establish integrated, flexible and coordinated care to maintain parental resilience in caring for children at home.

ASSOCIATION BETWEEN ANTENATAL CORTICOSTEROIDS AND NECROTISING ENTEROCOLITIS IN PRETERM INFANTS

AA Garvey[1], B Cleary[2], N McCallion[1]
[1]Neonatal Unit, Rotunda Hospital, Dublin, Ireland
[2]Pharmacy Department, Rotunda Hospital, Dublin, Ireland

Introduction:
Antenatal corticosteroids are currently standard of care for all women at risk of preterm labour. Research conducted by Liggins and Howie cited a reduced incidence in Respiratory Distress Syndrome (RDS) in preterm infants whose mother had received antenatal steroids. (1) Necrotising Enterocolitis (NEC) is the most common gastrointestinal emergency in preterm infants. The association between antenatal steroids and NEC remains controversial with conflicting evidence. This study aims to define the relationship between antenatal steroids and the incidence of NEC.

Methods:
A cross-sectional, observational study was conducted in the Rotunda Hospital, Dublin, a tertiary neonatal centre. All infants born on site, less than 30 weeks from 2013 to 2014 were included. Basic demographics and data on antenatal steroids was obtained from maternal charts and included preparation, dose and timing of steroids given.

Results:
128 very low birth weight infants were identified of whom 126 infants had complete data. Mean gestation was 26.5 weeks and mean birth weight was 1281g. 95 infants had 2 doses of steroids administered, of whom 10 had received their second dose <12 hours before delivery. 14 infants developed necrotising enterocolitis (11%). There was no association found between steroid exposure, number of doses or type of steroid used and the occurrence of NEC in this cohort.

Conclusion:
No association was found between antenatal steroid exposure and NEC in this cohort of VLBW infants.

(1) Liggins GC, Howie RN A controlled trial of antepartum glucocorticoid treatment for prevention of the respiratory distress syndrome in premature infants. Pediatrics. 1972;50(4):515.

REDUCING PHLEBOTOMY IN AN IRISH NEONATAL INTENSIVE CARE UNIT.

AR Geoghegan[1], A Collins[1], S Hackett[1], I Farombi[1]
[1]Paediatrics, Our Lady of Lourdes, Drogheda, Co Louth, Ireland

Aims

Excessive phlebotomy in neonates has been shown to contribute to iatrogenic anaemia requiring blood transfusion. There is also an increased risk of sepsis with repeated phlebotomy. We aimed to reduce the number of blood tests performed on neonates admitted to our NICU for these reasons and to reduce costs. 'Growing bloods' are routine weekly bloods done on growing preterms to assess for anaemia, osteopaenia and electrolyte abnormalities. There is limited evidence for performing growing bloods in late preterms and they almost never require intervention particularly if the baby is asymptomatic.[1]

Methods

An audit was performed in August 2015 where the number of blood tests that were requested on the previous 29 babies admitted to NICU were counted. Full blood counts, renal and liver function, and CRPs were included. A new protocol on growing bloods was introduced and a repeat audit was done six months later.

Results

The average gestation in our NICU was 36.8 weeks (this was consistent in both audits). Prior to the introduction of the new protocol, 264 blood tests were requested. 23(8%) were abnormal and required further action. In the second audit, 235 bloods were performed which is an 11% reduction. In the second study, 45 (19%) were abnormal showing that blood tests were being ordered more judiciously.

Conclusions

There was a reduction in phlebotomy performed in neonates after the introduction of the protocol. We are awaiting a new blood gas analyser in our unit to further reduce blood testing by increasing point of care testing.

1. Arch Dis Child Fetal Neonatal Ed 2008 Mar;93(2):F171-2. Rationalising the use of "growing bloods" in stable preterm infants. McNamara R, Molloy EJ

NEONATAL THYROID FUNCTION: TEST FIRST, THINK SECOND?

LE Geraghty[1], MJ O'Grady[1]
[1]Department of Paediatics, Midland Regional Hospital, Mullingar, Ireland

Aims

All infants undergo bloodspot TSH-based newborn screening for primary congenital hypothyroidism. Many infants are subjected to additional venous thyroid function tests (TFTs). We sought to evaluate the current practice in Irish maternity units.

Methods

Using a standardised proforma, we conducted a telephone survey of all 19 maternity units in the Republic of Ireland in June 2015 regarding thyroid function testing policies in term infants.

Results

The response rate was 100%. Thirteen (68%) units routinely test all infants born to mothers with autoimmune hypothyroidism. Based on their respective delivery rates, we estimate that approximately 1500 infants undergo duplicate testing annually, for a condition, transient congenital hypothyroidism, which will affect one infant every three years (based on 60,000 births annually), and is detectable using bloodspot TSH. Seven (37%) of centres test on or before day 5; when up to 28% of TFTs performed in infants of mothers with autoimmune thyroid disease will be abnormal [1], necessitating a repeat sample. Nine (47%) of centres test between day 5-10, *after* bloodspot TSH measurement has already been obtained. Fourteen (73%) of centres undertake venous TFTs in neonates with Down syndrome. The incidence of congenital hypothyroidism in Down syndrome is 1%, and is detectable on newborn screening. Neonatal thyrotoxicosis is not detected on bloodspot screening, and is potentially fatal. More than one-third of units fail to undertake postnatal venous TFTs in at-risk infants.

Conclusion

Additional thyroid function testing is unnecessarily being undertaken in a large number of infants while not enough appropriate testing is being undertaken in others. There exists significant potential for cost containment, less unnecessary infant discomfort and reduced parental anxiety, with more rational testing of thyroid function in newborns.

[1] Rovelli R, Vigone MC, Giovanettoni C, et al. Newborn of mothers affected by autoimmune thyroiditis: the importance of thyroid function monitoring in the first months of life. Ital J Pediatr. 2010 Mar 10;36:24. doi: 10.1186/1824-7288-36-24

PARENTAL OPINIONS ON CHILDHOOD INFECTIONS AND ANTIBIOTIC USE

Naomi Bergin, Aoife Branagan, Irene Gorman, Michael B O'Neill
Mayo University Hospital, Castlebar, Co Mayo

Aims:

This study explored parental knowledge and understanding of antibiotics in treating childhood illnesses and their expectations of healthcare providers in paediatric healthcare services.

Methods:

It was a cross sectional study carried out in the ED and Paediatric Outpatient department in a Mayo University Hospital over a three-week period exploring the use of healthcare services, knowledge of childhood illness, satisfaction with outcome of a consultation, problems associated with antibiotic use.Likert scoring system was used ranging from 1 to 6. Ethical approval was obtained.

Results

One hundred and thirty-four parents were surveyed. Results showed a heavy interaction with the healthcare system. All respondent had a GP visit in the past 6 months while 28.8% had over 7. 28% had no visit to ED, 65% between one and three ED visits, 2% more than 9 visits.
Knowledge of common illness varied with 70.9% of respondents knowing the common cold was viral in origin. Support for non-antibiotic usage for the following symptom complexes were as follows: runny nose 5.62, sore throat 4.1, diarrhoea and vomiting 5.4, cough 4.6, ear pain 3.6, temperature 4.8.

Parents trust the opinion of healthcare providers and were satisfied to return if no improvement in symptoms, and use delayed script therapy (Mean Likert 2.3) .84% of respondents were aware of resistance resulting from use of antibiotics. There was less knowledge regarding allergies and side effects of antibiotic use.

Conclusion

Parental knowledge of how and when an antibiotic should be used to treat common childhood illnesses is appropriate with an awareness of antibiotic overuse. Armed with the knowledge from this survey we may be able to decrease unnecessary paediatric antibiotic use.

Poster No.55

Paediatric Emergency Department Attendance in an Irish Peripheral Hospital

Dr. Irene Gorman, Dr. Michael O'Neill, Mayo University Hospital

Introduction:

This study explored how children are referred to the Emergency Department in an Irish peripheral hospital and evaluated parental expectations on arrival.

Methods:

This was a cross sectional study carried out in the Emergency Department in Mayo University Hospital over a two week period. A survey, approved by the hospital ethics committee, was given to 50 parents attending the department.

Results:

We analysed patient demographics, referral source, waiting times, along with parental expectations and opinion on the management of their child.

74% of respondents were presenting with children under 6 years of age.

94% of children arrived via private transport or car, no respondents used public transport, 6% of children brought by ambulance.

70% of children were referred to the Emergency Department via a primary care doctor, 64% of these referred by their own General Practitioner (GP), 36% referred by an out of hours GP, 30% self presented to ED. 92% of parents listed their GP practice as where their child receives regular care.

50% of parents surveyed had expected to be sent to the ED when they attended their GP. 48% of parents thought their child would be treated and sent home by their GP, just one parent expected out-patient referral. As regards admission to hospital, 35% of parents thought their child needed admission, 26% thought they would be discharged from the ED, 39% undecided.

The average waiting time in the Emergency Department to be seen by a doctor was 1hour 25minutes.

Two-thirds of parents had attended the Emergency Department previously with their child.

As regards medical cover, 44% of parents had a GP under6 card, 14% had an under6 card along with private health insurance, 42% of parents had a GMS medical card.

When asked to rate the severity of their child's illness from 1 – 10, mean response was 5.6.

Conclusion:

Our results are interesting in providing an overview of the local referral process to the Emergency Department in an Irish peripheral hospital and outline the heavy interaction between primary care services and the ED.

The recent introduction of the GP under 6 visit card now ensures free primary care to all children less than six years of age in Ireland. This is expected to increase the workload of General Practitioners and bring attention to the relationship primary care centres have with Emergency Departments. It is important to audit practices following these changes to ensure paediatric healthcare providers are adequately resourced.

CASE REPORT: RARE RADIOLOGICAL EVIDENCE OF VASCULAR ABNORMALITY DURING A HEMIPLEGIC MIGRAINE ATTACK IN A 9 YEAR OLD GIRL

AS Griffiths[1], L Mccarron[1], E Phelan[2], D Webb[1, 1]Neurology, OLCHC, Dublin, [2]Radiology, OLCHC, Dublin

Background

Previously healthy and neurodevelopmentally normal 9 year old female, with acute neurological abnormality.

Case

This patient presented to the ED with sudden onset right sided weakness. She had been previously well and woke with right sided arm and leg weakness with expressive dysphagia. She had normal understanding and could use gesture.

She was pallid with normal vital signs. Cardiovascular, Respiratory, Gastrointestinal and Otolaryngological examinations were normal. She was orientated, but experienced difficulty completing sentences. She had a right sided hemiparesis of grades 3-4/5 with sensation intact. Deep tendon reflexes were normal and planters were equivocal. Cranial nerves were intact. Vision was normal and she appeared not to have a visual field defect. At this point headache was not a feature.

CT brain demonstrated effacement over the superior surface of the left hemisphere *(Fig1(a)* & *Fig1(b))*. This did not exclude a vascular stroke-like event and and we proceeded to MRI. Susceptibility weighted imaging demonstrated left hemispheric venous dilatation *(Fig2).* Both CT and MRI were performed during the symptomatic event of hemiplegia. Headache became a feature immediately after MRI scanning. Symptoms resolved over 5 hours. She was not amnesic. This was her first presentation with migrane. These changes seen on MRI during the event had resolved on follow-up MRI at 4 months.

Discussion

This demonstrates radiological evidence of transient vascular abnormality and supports current hypotheses of vascular pathophysiology as an underlying cause of hemiplegic migrane.

The aura is representative of reversible cerebral cortical dysfunction, probably caused by neuronal excitability associated with transient oligaemia then hyperaemia in the cerebral cortex.

This potentially demonstrates an epi-phenomenon not previously described in Ireland. A handful have been illustrated worldwide in children. To the best of our knowledge this is the first example of transient vascular abnormality in hemiplegic migraine where headache had not yet become a feature.

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CASE REPORT: MOSAIC TRISOMY 21 / TURNER'S SYNDROME

KN MCCARTHY[1], **AS GRIFFITHS[1]**, N MCCALLION[1]
[1]DEPARTMENT OF NEONATOLOGY, ROTUNDA HOSPITAL, DUBLIN 1, IRELAND

Background

A female infant with mosaic trisomy 21/Turners syndrome (45 X0, 47 XX +21). Phenotypic features at birth were consistent with Trisomy 21. Her postnatal course was complicated by transient abnormal myelopoiesis which had resolved.

Case presentation

A female infant was born at 37^{+3} weeks gestation following an spontaneous vaginal delivery. Examination was significant for upslanting palpebral fissures, epicanthic folds and low set ears. A third fontanelle was also present. Examination of the peripheries revealed a single palmar crease on the right hand and a bilateral sandal gap. There was hypotonia on ventral and vertical suspension with mild head lag. Demonstrated was an abnormal female karytotype of 45X, 47XX + 21 with presence of 2 cell lines. Twenty one metaphases had 45x while 19 had 47xx+21. A buccal smear revealed two abnormal cell lines - 65% trisomy 21 and 34% XO disomy 21. Also significant in post-natal course was thrombocytopaenia and haematology opinion was sought. Investigations displayed a population of immature myeloid cells (CD7 positive), thrombocytopenia on blood film and atypical mononuclear cells with circulating myeloblasts. A diagnosis of transient abnormal myelopoiesis was made. This has resolved with follow up.
We were pleased to see her growing and thriving appropriately at six week follow up with almost normal development at one year of age.

Discussion

The incidence of Trisomy 21 in Ireland is the highest in Europe (1 in 546 live births). Incidence of Turner's syndrome is 1 in 2500 live female births. Double aneuploidy of both autosomal and sex chromosomes is rare. Patients with mosaic Trisomy 21 typically demonstrate a milder phenotype than non-mosaic individuals. This individual is likely to demonstrate both features of Turner's syndrome and Trisomy 21 although previous reports on Turner/Trisomy 21 polysyndrome mosaicism suggest that phenotypic features of Downs Syndrome predominates.

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EVALUATION OF FEBRILE ILLNESS IN CHILDREN OF UP TO 3 MONTHS, ARE WE FOLLOWING GUIDELINES?

A Haider, M Akram, W Asif
[1]Paediatric Department, St. Luke's General Hospital, Kilkenny, Ireland

Aims: to evaluate up to what extent guidelines are being followed in children of age up to 3 months who are admitted with fever more than 38 degree centigrade in paediatircs department St. Luke's General Hospital Kilkenny.

Methods: retrospective review of charts, charts were analyzed and compared to guidelines.

Results: total 12 patients (n=12) were analyzed, all (100%) patients had Full blood count, CRP and Blood Cultures done, lumbar puncture was indicated on 10 (83.3%) and was performed on 8 (66.6%) patients, chest x-ray was indicated in 8 (66.67%) patients, and it was performed on only 5 (41.6%). Urinalysis on 1 (8.3%) of the indicated patients was not done.

Conclusion: 20% of the indicated patients did not have Lumbar Puncture performed and similarly 37.5% did not have chest x-rays done. 8.3% patients did not have urinalysis done.

Re-audit Results: total 10 patients (n=10) were analyzed, all (100%) patients had Full blood count, urinalysis, CRP, Blood Cultures and Lumbar Puncture performed. All 4 indicated patients had CXR performed.

Re-audit Conclusion: all indicated patients got respective indicated investigations done and this showed significant improvement in clinical practice.

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PARENT'S USE OF THE INTERNET IN THE SEARCH FOR HEALTHCARE INFORMATION AND SUBSEQUENT IMPACT ON THE DOCTOR-PATIENT RELATIONSHIP

S Harvey[1], A Memon[1], R Khan[1], F Yasin[1]
[1]Department of Paediatrics, University Hospital Kerry, Tralee, Co. Kerry, Ireland

Aims

The internet is an unavoidable source of healthcare information. This information, both reliable and unreliable, has previously been shown to influence carer's decisions. No studies, to our knowledge, have looked at this information seeking behaviour amoung parents and its subsequent potential impact on the doctor patient relationship. Our aim was to determine the most popular source of healthcare information amoung parents. In addition to this we explored the reasons for, and the consequences of, using different sources of healthcare information.

Methods

Cross sectional questionnaire based survey of paediatric outpatients. Enrollment took place over 4 weeks in March 2015. There were no inclusion or exclusion criteria and enrollment was voluntary. In total 100 questionnaires were completed.

Results

General Practitioners were the most common source of healthcare information. The internet ranked 3rd as a reliable source of healthcare information. The internet was commonly used as an educational resource to learn about causes, treatment and medications. A significant percentage of our population expressed concern regarding internet information reliability. A small percentage of parents were concerned that disclosing internet usage may worsen the relationship with their doctor.

Conclusion

Parents showed a willingness to learn about diseases and treatments, and felt the internet was a good resource to do so. This study shows that open discussion about internet usage between parents and doctors is not common and carers feel at risk of judgment should they admit to internet usage. The internet should be seen as a positive adjunct to patient education which can improve understanding thus strengthening the doctor patient relationship. The internet will never replace the role of healthcare professionals but must be seen as an integral part of a multi-disciplinary approach.

SPONTANEOUS INTRA-VENTRICULAR HAEMORRHAGE, A RARE EVENT IN TERM NEONATES

Mahmoud Hassan, Aileen Conway, C.B. Sabu, Siobhan Gallagher, Limerick Regional Hospital

Background:

Spontaneous intra-ventricular haemorrhage (IVH) is rare in term neonates.[1] Reported causes include trauma, thrombocytopenia, vascular malformation rupture, sinus venous thrombosis, and coagulation abnormalities.

Results:

We report a case of a full term, normal delivery baby H who presented at 8-days to the Emergency Department with limb jerking. She had extensor posturing and cycling of limbs with downwards deviation of both eyes. She had a full tense fontanelle. A CT brain showed extensive IVH obstructing the fourth ventricle. She was stabilised and transferred to a tertiary PICU for further management.

Subsequently she developed progressive enlargement of her head circumference rising above 99.8th centile with ongoing sun setting of her eyes. EEG confirmed seizure activity treated with Levetiracetam. MRI brain confirmed a large intra-ventricular haemorrhage filling the ventricles and basal extra-ventricular cisterns, with abnormal signal in the right caudio-thalamic grove which may represent the source of the haemorrhage. No underlying vascular abnormality was seen on MR Angiography and MR Venogram. Investigations including coagulation screen, metabolic work up, skeletal survey, and ophthalmology examination were normal.

In the interim her mother became acutely unwell, presenting with an empyema requiring pleural decortication, the cultures of which grew Gardnerella. CSF samples from H were negative on culture, with negative PCR for Group B *Streptococci, S pneumonia*, *N meningitides*. CSF testing using16DrDNA PCR was negative for Gardnerella.

Serial cranial ultrasounds showed progressive enlargement of anterior ventricular horn diameters consistent with post hemorrhagic hydrocephalus. Neurosurgeons inserted an interventricular reservoir for regular tapping of her CSF until it clears from blood. Clinically she is presenting with low central muscle tone, increased tone in left upper limb and delayed visual fixation.

Conclusion:

This case of spontaneous IVH in a term newborn has lead to post-haemorrhagic hydrocephalus with potential long term neurodevelopmental disabilities.

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THE USE AND INTERPRETATION OF MICROARRAY IN PAEDIATRICS

Fergal Howley, Joseph Doyle, Patricia Harkins, Gregory Offiah, Amelia O'keeffe, Kate Somers, Johnny Walsh, Judith Meehan, Nehad Metwally, Eleanor Molloy
Discipline of Paediatrics, Trinity College, the University of Dublin, Ireland.

AIMS: The aim of this project was to study the use of the microarray in paediatric medicine, focusing on the complex interpretation of the data and ethical issues.

METHODS: The topic was divided into sub-headings, the key words of which were searched in PubMed, up to February 2016. Specific searches included:
-(Chromosomal) AND (microarray) AND (application)
-(Chromosomal) AND (microarray) AND (interpretation)
-(Chromosomal) AND (microarray) AND (ethics)
-(Chromosomal) AND (microarray) AND (future)
These gave 228, 134, 12, and 205 results, respectively.
Papers were chosen based on relevance and reviewed by the group. A total of sixteen papers were considered appropriate for inclusion in our poster.

RESULTS: The use of microarray has improved the diagnostic yield by 12.2% compared to conventional karyotyping (Miller *et al).* Thienpont *et al* uncovered chromosomal abnormalities in 30% of patients with congenital heart defects. Microarray is considered to be the gold standard in postnatal genetic testing.

CONCLUSIONS: With advances in medical knowledge and the increased prenatal use of microarrays, the ethical issue of information disclosure must be considered in each case.

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DIABETES KNOWLEDGE AND ATTITUDES AMONG SPECIAL NEEDS ASSISTANTS

S A Hurley[1], P McCabe[2], A Torrance[3], M J O'Grady[1]
[1]Department of Paediatrics, Midland Regional Hospital, Mullingar, Co. Westmeath
[2]Irish Primary Principals Network, Glounthaune, Co. Cork
[3]National Council for Special Education, Trim, Co. Meath

Aims

There is extensive published literature concerning diabetes knowledge among primary school teachers. No such literature exists regarding special needs assistants (SNAs), whose role is to provide for the care needs of such children. We conducted a cross-sectional survey of diabetes knowledge among SNAs in the Republic of Ireland.

Methods

A link to an anonymous online SurveyMonkey® questionnaire, to be shared with SNAs, was embedded in an electronic article regarding diabetes in school, distributed through the Irish Primary Principals Network (IPPN). The knowledge component, consisting of 13 multiple choice questions was derived from 'Test your Diabetes Knowledge' (Husband et al) a previously validated questionnaire. Answers were scored as +1,-1 and 0 for correct, incorrect and don't know responses respectively. A total score of ≥ 7 was considered to indicate adequate knowledge. Attitudes were assessed using the psychosocial component of Diabetes Attitudes Scale version 3 (DAS-3).

Results

Respondents were universally female. Sixty-three percent of respondents currently provide assistance to a child with diabetes. A child with diabetes or their parents were the most common source of diabetes information for SNAs. Thirty eight percent of respondents were deemed to have adequate diabetes knowledge. The median percentage correct answers for individual knowledge questions was 70 (28-92)%. Forty percent could not indicate the correct treatment of hypoglycaemia and 25% selected the incorrect action when a child with diabetes loses consciousness. The attitudes survey indicated good understanding regarding the impact of diabetes on the student and their families.

Conclusion

This preliminary data indicates that diabetes knowledge among SNAs is marginally better than that reported for teachers in the literature. A larger sample is required to confirm this. Diabetes training for SNAs needs to be addressed through the National Paediatric Diabetes working group.

BREATHTAKINGLY RARE CASE OF PYLORIC STENOSIS

S A Hurley[1], F McCartan[1], M J O'Grady[1]
[1]Department of Paediatrics, Midland Regional Hospital, Mullingar, Co. Westmeath

Aim

To report a case of pyloric stenosis with profound weight loss and hypoventilation in the setting of severe metabolic alkalosis.

Methods

A retrospective chart review was carried out to include all relevant patient demographics and details of presentation, surgery and re-presentation. A review of the literature was undertaken to identify cases with similar features.

Results

A nine week old male infant presented in extremis with a one week history of vomiting. He was 30% below birthweight and had a Cheyne-Stokes respiratory pattern. Venous blood gas demonstrated severe metabolic alkalosis and ultrasound confirmed pyloric stenosis. He underwent Ramstedt pyloromyotomy and recovery was uneventful. Two months later, his growth began to falter once more and ultrasound again confirmed pyloric stenosis. Clinical and intraoperative findings were consistent with true recurrence, which is extremely rare with only a handful of published cases. Until now, it has been thought that true recurrence is due to early operative intervention in a disease process which is ongoing, necessitating a second surgical procedure. To date, all true recurrences have been in infants whose initial presentation was less than 4.5 weeks of age, in keeping with the above theory.

Conclusions

Significant metabolic alkalosis in infants can cause respiratory compromise and warrants close monitoring. There have been just two previous reports of hypoventilation in infants with metabolic alkalosis and pyloric stenosis. True recurrence of pyloric stenosis can present in infants older as old as 9 weeks at initial presentation and challenges the validity of the “early intervention” theory.

PNEUMOTHORACES IN TERM AND NEAR-TERM NEONATES OVER A 1-YEAR PERIOD: CASE SERIES AND LITERATURE REVIEW

Dr Tim Hurley, Dr Regina Cooke
Paediatric Department, Portiuncula Hospital, Ballinasloe, Co. Galway

Aim.
To review the incidence of pneumothorax in term and near-term neonates in a general hospital over a 1-year period and to identify any potential risk factors.

Methods.
Chest x-rays (CXRs) done for patients admitted to Special Care Baby Unit from January 2015 to December 2015 were reviewed to identify cases of pneumothorax. CXRs reports were completed by a consultant radiologist. A retrospective chart review was completed for cases with patient demographics, mode of delivery, resuscitation required, co-morbidities and outcomes recorded. A literature review was done to assess risk factors and the impact of resuscitation techniques on the incidence of pneumothorax.

Results.
6 cases of pneumothorax were identified. All occurred in male patients, 5 in term neonates (mean gestation 39^{+4} weeks, range 38^{+5} – 40^{+5} and one in a late-preterm neonate (36^{+0} gestation). Mean birth weight was 3620gms (range 3200-4295gm). All infants required delivery intervention – 4 cases required LSCS, one forceps delivery and one ventouse delivery. 4 neonates required resuscitation at delivery, with one requiring CPAP and one requiring IPPV. There were high rates of co-morbidities – 2 cases of RDS, one of TTN and one of meconium aspiration syndrome. 4 patients required transfer to tertiary hospital and one infant died of an unrelated cardiac abnormality.

Discussion.
Known risk factors for neonatal pneumothorax include preterm delivery (PTD), low birth weight (LBW), male gender, co-morbidities and resuscitation techniques, particularly with high inspiratory pressures. Incidence of pneumothorax in this study (6/1880 live births, 0.32%) is greater than the reported rate (0.08%). The population identified had high rates of significant co-morbidities. The population was not exposed to extensive resuscitation, and there is no evidence that routine use of high Peak Inspiratory Pressure (PIP) of 30cmH_2O for term infants was a risk factor. European Resuscitation Council Guidelines 2015 recommend resuscitation for term infants with a PIP of 30cmH_2O, although higher pressures may be required.

Poster No.66

CUTANEOUS TUBERCULOSIS AN UNCOMMON INITIAL PRESENTATION OF MULTISYSTEMIC TUBERCULOSIS

SM Mustafa, OA Ihidero, PA Ihidero, BA Linnane

Aim

To report a case of cutaneous tuberculosis as an uncommon initial presentation of multi-systemic tuberculosis

Method

The patient's medical chart was reviewed and relevant clinical information was obtained.

Results

A 9 year old previously well Afghani boy presented to the paediatric emergency department with two puritic painful lesions on his right chest wall. There was no history of fever, cough, weight loss or trauma. He had immigrated to Ireland five months earlier. He had a right axillary lymphadenopathy and a BCG scar was noted. His blood work up was normal. He was commenced on intravenous co- amoxvclav and swabs were taken from both lesions. On further exploration of the family history, his older brother was being reviewed by the adult services and was recently commenced on treatment for pulmonary tuberculosis (TB). He was therefore investigated for TB.

His chest X-ray showed inferior lingular segment consolidation and airway disease suggestive of typical and atypical chest infection, his Mantoux test was >10mm suggestive of TB and acid fast bacilli (AFB) was isolated from the lesion swabs following microscopic examination. He was commenced on Anti-TB regimen and a CT of his chest was arranged. This revealed lingular segment consolidation invading the pleura, intercostals muscles and subjacent soft tissues suggestive of an atypical infection. A tenth rib pathological fracture with bilateral rib periosteal abscess formation was seen. A bone scan confirmed these findings and also showed milder involvement of adjacent right, ninth and eighth ribs suggesting osteomylitis in the setting of adjacent soft tissue infection/Inflammation. AFB was isolated on culture on two of his gastric aspirates, his QuantiFERON®-TB Gold blood test and GeneXpert MTB/RIF assay further confirmed TB.

Conclusion

Mycobacterium TB can affect virtually any organ with cutaneous TB accounting for 0.8% of organ involvement in children. This case highlights the importance of a detailed family history especially in immigrants who are reported to have a high incidence of multisystemic TB.

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THE APPROPRIATENESS OF COAGULATION STUDIES IN A PAEDIATRIC EMERGENCY DEPARTMENT

SM Mustafa, OA Ihidero, PA Ihidero, J Twomey, Limerick University Hospital, Limerick

Aim

To determine the indication for coagulation studies in the emergency department and its role in patient management

Method

A retrospective review of coagulation studies done in children under14 years' presenting to the emergency department (ED) in November 2015 was carried out. The laboratory data base was used to identify these patients and an archive and retrieval application (Canon ADOS Navigator) allowed each presentation is reviewed.

Results

A total of 78 coagulation studies were done during the study period. Results of 7 children over the age of 14 years were excluded. The age range of the children was from 2 weeks to 13 years. Coagulation was abnormal in 11 (15.4%) of patients; 2 had abnormal PT (15.6-15.9s), 7 abnormal APTT (41-58s) and in 2 patients both PT and APTT were abnormal. All patients with abnormal coagulation results did not have repeat tests done. Commonest presenting complaint in this group was fever 6 (54.5%) with or without a rash which was described as blanching or non-blanching. Their discharge diagnosis included viral exanthema/illness, URTI and UTI.

Sixty (84.6%) of patients had normal coagulation results. the commonest presenting complaint in this group was a rash which was seen in 6 (16.6%). Rash was described as blanching, non-blanching, petechiae, purpuric or puritic. Epistaxis, vomiting, abdominal pain and fever accounted for 4 (6%) patients each. The commonest discharge diagnosis was viral illness, and epistaxis with 4 patients each. Other diagnosis included Henoch Schnolein purpura, mesenteric adenitis, appendicitis, croup, URTI, constipation, otitis media and pharyngitis.

Conclusion

Our study has shown that coagulation studies is commonly over utilised in the ED. Strategies that may help to decrease the inappropriate request for laboratory studies may include an awareness of the cost of investigations among requesting doctors, implementation of guidelines or protocols stating the appropriate investigations in different clinical scenarios the use of online educational simulation to educate junior doctors to reduce requests for laboratory investigations.

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ACUTE MOTOR AXONAL NEUROPATHY VARIANT OF GUILLAIN- BARRE SYNDROME

Jamal.B , Qasim. M,Memon. A, Khan R.A, Khan A,

AIM:

We report a rare case of Acute motor axonal neuropathy variant of Guillain-Barre Syndrome admitted to Kerry General Hospital.

METHOD:

History, Examination, Lab Investigations, Radiological Investigations, Management and Outcome.

DISCUSSION:

OMC 3 Years 3 months old Ethiopian adopted boy presented to Paediatric A&E at Kerry General Hospital with Acute onset of sore throat and limping on right lower limb. Initial investigations were normal including examination was discharged home. He presented after 9 days with fever, sore throat, SOB and lethargy. He was afebrile and vitals were stable. On examination tonsils were inflamed with exudates, unable to elicit lower limb reflexes, marked head lag, down going B/L planters, hypotonia of lower limbs. Blood investigations FBC, ESR, LFTS,U&E, Coagaulation profile , monospot ,VBG, were normal, USG abdomen normal, CT brain-normal. Patient had acute respiratory distress and was intubated and referred to Tertiary care hospital for further care and management. Throat swab was positive for Enterovirus. Mycoplasma,CMV, Influenza negative. EMG showed polyneuropathy in GBS category. Initial MRI Normal. Repeat MRI showed enhancement of nerve roots seen-consistent with GBS. Patientt was already on IV-antibiotics and anti Viral, he was given IV-IG.

CONCLUSION:

GBS is a potentially life threatening post-infectious disease characterised by rapidly progressive symmetrical weakness of the extremities. About 25% of pts develop respiratory insufficiency. Diagnosis can usually be made on clinical grounds. There are five subtypes of GBS:

1. Acute inflammatory demyelinating polyneuropathy
2. Acute motor axonal neuropathy
3. Acute motor sensory axonal neuropathy
4. Pharyngeal-cervical-brachial variant
5. Miller fisher syndrome

AMSAN has been recently described as a subtype of GBS characterized by acute onset of distal weakness, loss of deep tendon reflexes, and sensory symptoms (2). The exact pathogenesis by which the virus causes the disease is not clear. The involvement of the central nervous system in the viral disease could be due to direct invasion of the central nervous system by the virus. Theref

IV IG and plasma pheresis are prone to be effective treatment with multidisciplinary approach and supportive treatment.

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SCREENING FOR PSYCHOLOGICAL DISORDERS IN CHILDREN AND ADOLESCENTS WITH TYPE 1DIABETES, AN AUDIT OF OUR PRACTICE AT PERIPHERAL HOSPITAL

Y Tanweer[1], **R Javed**, W Asif
[1]PAEDIATRIC DEPARTMENT, SAINT LUKE'S HOSPITAL , KILKENNY, IRELAND

Aims: To assess whether children with Type 1 DM are being accessed for Psychological disorder during their routine OPD visit as part of DM follow up as recommended by guidelines.

Methods: Retrospective review of charts of already diagnosed patients of type 1 DM, of age 5 years and above was done, diagnosed between June 2004 and September 2015 at Paediatrics department, St. Luke's hospital, Kilkenny. The data analysed using SPSS, hospital based encrypted computers &Chart reviews.

Results: total 23 Patients (n=23) were analyzed and showed that none of the patients (0%) out of 23 patients were screened for psychological disorder.

Conclusions: This audit has confirmed that children with type 1 DM are not routinely screened for psychological disorder on OPD reviews and no local guidelines exist.

We recommend that children with type 1 DM should be screened for psychological disorders during their OPD follow up. We also recommend to develop local guidelines for the OPD follow up and check list which include the screening questions about psychological disorder

http://www.bsped.org.uk/clinical/clinical_endorsedguidelines.aspx http://web.ispad.org/ https://www.nice.org.uk/guidance 2http://www.apeg.org.au/ 1http://guidelines.diabetes.ca/

AN AUDIT ON CENTILE CHARTS IN SPECIAL CARE BABY UNIT (SCBU)

Y Tanweer, R Javed, W Asif
[1]Special Care baby Unit, Paediatric Department, Saint Luke's Hospital, Kilkenny, Ireland

Aims: To assess whether the centile charts in SCBU are being maintained & updated properly and timely fashion.

Methods: Retrospective studies of the patient charts were studied from January 2015-Febuary 2015 at St. Luke's Hospital, Kilkenny and the documentation of the centiles charts were observed whether they were timely updated or not.
The data analysed using standard statistical software and spreadsheet (MS Excel).

Results: The following was the results, retrospective study of 35 cases, 40% of the cases studied had missing centile charts (either they were never documented or they went missing in the notes).
However 60% cases studied had their centile charts maintained, following parameters were documented Head Circumference, weight, and length. Head circumference measurement was not documented in 2%, Weight was monitored in 60% and length was not documented in 34%, 17% cases however had no follow up of maintained centile charts

Conclusions: This audit has confirmed that the Centile growth charts are not monitored properly.
We recommend that maintain the centile charts as per Standard WHO guidelines and follow them up as per the standard guidelines. We also recommend using centile charts to be plotted and maintained strictly in SCBU.

AN AUDIT ON THE REQUIRED INVESTIGATIONS WERE DONE AS PER GUIDLINES AT THE TIME OF DIAGNOSIS OF TYPE 1 DIABETES

Y Tanweer[1], **R Javed**, W Asif
[1]Paediatric Department, Saint Luke's Hospital, Kilkenny.

Aims: To assess whether Investigations were being done at the time of diagnosis of Type 1 DM in our ward as per recommended standards.

Methods: Retrospective studies of the charts of already diagnosed patients of Type 1 DM, of age 5 years and above, diagnosed between June 2004 and September 2015 at Paeditric department, St. Luke's Hospital, Kilkenny. The data analysed using SPSS, hospital based encrypted computers, Chart reviews & online laboratory reviews.

Results: Total Patients n=25, All recommended investigation done at the time of diagnosis 0 (0%), VBG, Glucose, Ketones were done in all the patients 100 (100%), HBA1c was done in 21 patients (84%), Celiac Screen was done in 17 patients (68%), Anti TPO was not done in any patient 0 (0%), TSH & T4 was done in 20 patients (80), Anti GAD sample was sent but not tested in 2 patient (8%) and was done in 5 patients (20%), Anti Insulin Ab was done in in 6 patients (24%), Anti Islet Ab was done in 8 patients (32%), Insulin Levels and Lipid Profile were done in 2 patients (8%), LFTs were done in 16 patients (64%) and c-peptide was done in 3 patients (12%).

Conclusions: This audit has confirmed that all the recommended Investigations are not done at the time of Diagnosis of Type 1 DM also it showed there is no set pattern to do the investigations and no local guidelines exist.

We recommend investigations should be done at the time of diagnosis of Type 1 DM as per guidelines. We also recommend to develop local guidelines for the unit for the recommended investigations.

http://www.bsped.org.uk/clinical/clinical_endorsedguidelines.aspx http://web.ispad.org https://www.nice.org.uk/guidance http://www.apeg.org.au http://guidelines.diabetes.ca/

CLINICAL UTILITY OF BLOOD CULTURE AND EFFECT OF UROKINASE IN COMPLICATED PNEUMONIA REQUIRING CHEST TUBE DRAINAGE

A Kalim[1], B Elnazir[1]
[1]Respiratory Department,National Childrens'Hospital Tallaght.

Background & Aim:
Parapneumonic effusions are thought to develop in 1% of patients with community acquired pneumonia[1],but in those admitted to hospital,effusions may be found in as many as 40% of cases[2].Our aim was to determine the utility of blood cultures in children with complicated pneumonia requiring chest tube drainage and to compare the hospital stay in urokinase recipient and non recipient groups.British Thoracic Society (BTS) guidelines for the management of community acquired pneumonia in children state that microbiological diagnosis should be attempted in children with complications of pneumonia in the form of blood culture[3].However studies have shown a low prevalence of bacteremia in the presence of pneumonia[4].According to BTS guidelines[5] intrapleural fibrinolytics shorten hospital stay and are recommended for any complicated parapneumonic effusion.

Methodology:
A retrospective review of all the children who were admitted to the National Childrens' Hospital Tallaght (NCH) from 1st January 2012 to 1st February 2015 with severe pneumonia and parapneumonic effusion requiring chest tube drainage was carried out. Laboratory results were checked for positive blood cultures. Length of hospital stay was collected from the patients' notes and analysed as two groups, patients who received urokinase and patients who did not.

Results:
Among a total of 11 recognised patients blood culture was negative in 8(72%).One Blood culture grew Acinobacter,which was clinically insignificant. Blood cultures could not be obtained in two patients (18%) prior to antibiotics commencement.Overall blood cultures were negative in all of these patients.3 of the 11(27%) patients received intrapleural urokinase through chest drains. The hospital stay was similar in both groups with an average of 7.6 days in urokinase and 8.25 days in non urokinase group.

Conclusion:
Children hospitalised with complicated pneumonia have a low rate of positive blood culture. Urokinase use slightly reduced the length of the hospital stay. These findings were consistent with current guidelines.

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D-GLYCERATE KINASE (GK) DEFICIENCY MAY BE A NON-DISEASE.

A Kalim[1], E Crushell[1]
[1]National Centre for Inherited metabolic Diseases, Childrens' university Hospital Temple Street, Dublin, Ireland

Introduction:
Autosomal recessive deficiency of glycerate kinase leads to accumulation of D-glyceric acid which can be measured in urine organic acid analysis. D- glyceric aciduria is a very rare disorder with just 14 patients reported, including three with genetic confirmation. The reported clinical phenotype is so variable that the question arises as to whether this disorder represents a biochemical variant or a disease[1.]
Glyceric acid is a three carbon sugar which is found in humans in two different configurations, D- and L-glycerate[2]. Increased excretion of glyceric acid can be observed in two distinct and rare inherited metabolic disorders, D-glyceric and L-glyceric acidurias[3.]

Case Report:
Our cases are the 4th and 5th patients with genetic confirmation[4].Case 1 is a five year old boy with autism and global developmental delay. He had speech delay and was diagnosed with autism and moderate intellectual disability at age 3 years. The second patient is the younger sister of Case 1. She is three years of age and has neither health nor developmental concerns.

Results:
Urinary organic acids demonstrated a marked increased excretion of glyceric acid. No oxaluria was noted. Chiral chromatographic separation of the D- and L-enantiomers confirmed the presence of D-glyceric acid.Both children are homozygous for the novel mutation c.767C>G in exon 5 of the GLYCTK gene, predicted to affect the enzyme by replacing the evolutionary conserved Proline with Arginine (P256R). Both parents are heterozygous for this mutation.

Conclusion:
In view of the heterogeneous clinical presentation of children with D-glyceric aciduria, further work is needed to clarify whether D-.glycerate kinase deficiency is a disease or merely a biochemical variant. The differing phenotype in our two patients adds weight to the view that this is a benign disorder.

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Poster No.74

TRICHOBEZOAR CAUSING DISTAL SMALL BOWEL OBSTRUCTION

M Katre, C Sreenan . Department of Paediatrics , University Hospital Limerick

Background: Trichobezoar consists of a compact mass of hair , which can cause obstruction of the gastrointestinal system at various stages. It can present as a surgical emergency. It can be associated with trichotillomania.

Case Report: We are reporting the case of 11 years old girl , who has diagnosed with Trichobezoar by CT Abdomen. She presented to Emergency department of UHL, Limerick with abdominal pain and vomiting intermittently for 2 days. She had one episode of bile stained vomitus as well , when presented ED. Her abdomen was tender on palpation and loud bowel sounds were present as well. PFA was done at that time, which showed signs suggestive of small bowel obstruction. She also had CT Abdomen which showed a distal small bowel obstruction.. She was transferred to OLHSC, Crumlin for further management. Her CT Abdomen had revealed that, she had a ball of hair in her small bowel. It is identified as Trichobezoar and was causing obstruction of distal small bowel. She undergone Laparotomy in Crumlin hospital. Since operative procedure, she has been doing well . Plan was made to put her on the Iron supplements in next few months to treat anaemia. In Background, she was under treatment for Iron deficiency anaemia. She was on Oral Galfer for last few months. She does have a history of eating her hairs, but she was denying it in lately. Developmentally, there was no issues. Her diet was not a healthy one as mentioned by her mum. There was also some concern

Discussion: This is a very interesting case of Trichobezoar casuing distal small bowel obstruction. In children, this could be one of the rare causes of dietary insufficiency and bowel obstruction. It could be more relevant in the teenagers. If the child is not responding adequately to pharmacological treatment of chronic anaemia, this could be the worth cause looking for.

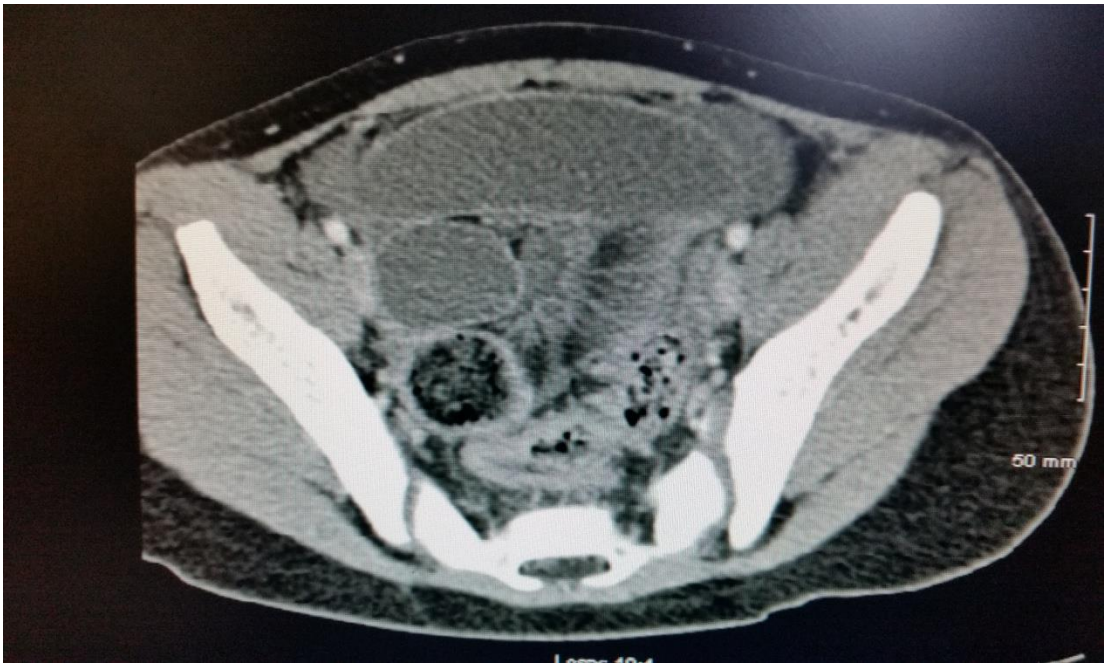

Figure 1: Showing Trichobezoar in distal small bowel causing obstruction

PREVENTION FAR BETTER THAN CURE: A REVIEW OF VARICELLA-RELATED ADMISSIONS IN A DUBLIN PAEDIATRIC HOSPITAL

SG Keane[1], AJ Nicholson[1]
[1]General Paediatrics, Temple Street Children's University Hospital, Dublin, Ireland

Aims: To review varicella-related admissions over a 40 month period (January 2013-April 2016) in a Dublin paediatric hospital and to demonstrate the associated burden on the health system.

Methods: Data was collected on children presenting to the Emergency Department with varicella related complaints between January 2013 and April 2016. The overall number of presentations was quantified and subsequent chart reviews of those admitted were carried out. Information gathered included gender, age at presentation, presence of pre-existing immune deficiency, length of hospital stay, length of stay in intensive care , if required, the nature of the complication and occurrence of inpatient complications.

Results: In total, there were 560 varicella-related presentations over the 40 month period recorded. Of these, 34 required hospital admission, the majority of whom (23) were aged 4 years and under. Amongst the 34 admissions, there was only one case of pre-existing immune-deficiency. Otherwise, all children were previously healthy. Total length of stay across all admissions came to 203 nights, including 1 night in the intensive care unit. With regard the nature of the complications, there were 26 cases of secondary bacterial infection, 1 case of haemorrhagic varicella, 3 cases of neurological complications and 1 post-viral pneumonitis. Of the 26 super-imposed infections, 9 were confirmed Group A Streptococcal infection.

Conclusions: Primary infection with Varicella-Zoster virus results in varicella, an acute illness characterised by a vesicular rash, mild fever and other systemic symptoms. Whilst most cases of varicella are mild and self-limiting, severe or complicated cases of varicella often require in-hospital management and as a result represent a burden to the health system. VZV vaccine is currently available for high risk groups- all bar one of these admissions would not be considered high risk . Extrapolation of figures to reflect national trends would allow a cost benefit analysis of introducing the vaccine.

KNOWLEDGE, ATTITUDES AND BELIEFS OF IRISH PARENTS REGARDING FEVER IN CHILDREN: AN INTERVIEW STUDY

Kelly M[1,2], Sahm L J[1, 3], Shiely F[2,4], O'Sullivan R[5,6], McGillicuddy A[1], McCarthy S[1, 7]
[1]Pharmaceutical Care Research Group, School of Pharmacy, University College Cork, Ireland; [2]HRB Clinical Research Facility, Mercy University Hospital, Cork, Ireland; [3]Department of Pharmacy, Mercy University Hospital, Cork, Ireland; [4]Department of Epidemiology and Public Health, University College Cork, Cork, Ireland; [5]School of Medicine, University College Cork, Cork, Ireland; [6]National Children's Research Centre, Dublin 12, Ireland; [7]Department of Pharmacy, Cork University Hospital, Cork, Ireland.

Aims: Fever is one of the most common childhood symptoms [1, 2]. It causes considerable anxiety and worry for parents [2, 3]. The aim of this study is to describe parental knowledge, attitudes and beliefs regarding their experiences in management of childhood fever in children aged five years and under.
Methods: A phenomenological approach was used to explore the lived experiences of parents when caring for a febrile child. Ethical approval was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals prior to initialising the study. Semi-structured interviews were conducted with 23 parents at community outreach ante-natal clinics in the Cork area during March and April 2015. The Francis method was used to detect data saturation [8]. Data was analysed using thematic analysis.
Results: Twenty three parents contributed to the study. Five themes emerged from the data: assessing and managing the fever; parental knowledge and beliefs regarding fever; knowledge source; pharmaceutical products; initiatives. Whilst parents showed a good knowledge of fever as a symptom, nonetheless, management practices varied between participants. Parents frequently sought information and reassurance from healthcare professionals. There was a desire for more accessible, consistent information to be made available for use by parents when their child had a fever or febrile illness. Parents revealed a reluctance to use suppository forms of medication.
Conclusion: Parents indicated that further initiatives are required to provide trustworthy information on the management of fever and febrile illness in children. These resources coupled with effective communication are gaining greater importance as time allotted for health care visits decreases [9]. Healthcare practitioners should play a significant role in educating parents in how to manage fever and febrile illnesses in their children. The accessible nature and location of pharmacies could provide useful support for both parents and General Practitioners.

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SHOULD VITAMIN D (vitD) STATUS BE ROUTINELY MONITORED IN EARLY PRETERM INFANTS?

Kelly E, Ryan CA. Department of Neonatology Cork University Maternity Hospital (CUMH) and Department of Paediatrics and Child Health, University College Cork.

Background: Early preterm infants (EPTIs) are at risk of low vitD status because of high prevalence of vitD deficiency in pregnancy, lack of sunlight exposure during hospitalisation and difficulty in ensuring adequate enteral nutrition. *VitD can cross the placenta and most studies have found an association between maternal and cord 25(OH)D levels, with infants typically having just 50-60% of their mother's vitamin D stores at birth.*[1]

Aim: To determine the frequency of low *25(OH)D* levels in CUMH born EPTIs, <32 weeks postmenstrual age (PMA), and compare to a similar population in the United States.[2]

Methods: Over 8000 infants are born annually at CUMH, including approximately **107** EPTIs. All those who had *25(OH)D* levels measured between Jan 2014 – Jan 2016 were sourced through the CUMH Biochemistry Department database. Their charts were reviewed. Serum 25(OH)D concentrations were measured using liquid chromatography/tandem mass spectrometry. Permission for this audit was granted by the Audit Office, CUH.
Results: Only 30 (28%) of 199 EPIs infants born during the study period had *25(OH)D* levels measured at any time during their hospitalization. More than twice as many CUMH infants had vitD levels < 50 nmol/L compared to Ohio, US infants (table)

Characteristics	All VPMIs **CUMH** **(n= 30)**	< 28 weeks **CUMH** **(n=21)**	28-32 weeks **CUMH** **(n= 9)**	All VPMI **Ohio, US** **(n = 120)**	< 28 weeks **Ohio, US** **(n = 67)**	28-32 wks **Ohio, US** **(n = 53)**
Male	43.3%	43%	44%	43%	41%	45%
N (%) African–American	0	1 (5)	0	46 (39)	29 (43)	17 (32)
Maternal 25(OH)D in nmol/L at delivery	NA	NA	NA	49.2 (19.2)	44.0 (12.5)	44.0 (12.5)
Mean 25(OH)D levels in nmol/L	41 (18.1)	39 (18.1)	47 (17.5)	64 (21.8)	59.2(20.5)	71 (23.5)
N (%) infants with 25(OH)D <50 nmol/L	25(83%)	19 (90%)	6 (67%)	43 (36)	27 (40)	16 (30)

Table: Demographic characteristics and 25-hydroxyvitamin-D concentrations of CUMH infants and Ohio, US infants. (CUMH: 25(OH)D concentrations measured anytime during hospitalization: Ohio U.S done at 36 weeks PMA or at discharge.) NA: not available

Conclusion: Only a minority of Irish EPIs had 25(OH)D levels measured during birth hospitalization. Low serum concentrations (<50 nmol/L) were twice as common in Irish infants compared to U.S infants. Although current vitD intake of 400 IU/day is recommended for infants to achieve target 25(OH)D concentrations ≥50 nmol, this study suggests that this nutritional strategy may be insufficient for Irish born EPTIs. Therefore, higher vitD supplementation, in addition to routine monitoring of 25(OH)D in EPTIs are recommended Improving maternal vitD status during pregnancy can also help optimise the vitD status of EPTIs.[2]

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STRUCTURED APPROACH TO ASSESSMENT OF PREMATURE ADRENARCHE

Dr. Khalid khan ,Our lady of Lourdes Hospital Drogheda

This article aims to provide a concise structured approach to the child with premature adrenarche.Prematue adrenarche is not a uncommon presentation feature in children in outpatients. The cause is rarely organic. We review the history in children and discuss the important features that may alert the underlying pathology. In the vast majority of cases, reassurance is all that is required and a through initial consultation can exclude rare, serious disease and provide vital reassurance to children and families.

Introduction: Premature Adenarche is not an uncommon presentation feature in children that causes a great deal of anxiety in children, parents and health care professionals. It effects equal number of children under 12 more frequent in girls. Underlying organic pathology is rare in children with Premature adrenarche and parents/patients can easily be reassured that there is not a serious underlying cause. The study looked at a total of hundred and twenty children presenting to OPD with Premature adrenarche found that only 0.5—1% of these had underlying pathology. The consultation should focus on acknowledging the patient/parental fears, exclusion of rare, serious underlying pathology and appropriate reassurance.

It is important to assess these patients. Previous studies have shown that a through history and physical examination are sufficient in the vast majority of cases to exclude a serious cause for the Premature adrenarche targeted diagnostic testing can be performed to address concerns.Age is a consideration when assessing these children.

Background: Premature pubarche is a common cause of premature adrenarche.Pubarche refers to the isolated appearance of sexual hairs. Age in girls less then eight years and in boys less then nine years.Premature puberche causes are unclear and mechanism of onset and significance remains unclear.Premature puberche is the diagnosis of exclusion of Premature adrenarche..Premature adrenarche is the increase in adrenal androgens at about six years of age.Zona reticularis precedes the activation of pituatary Gonadal axis(gonadarche).Adrenarche manifest as puberache with dysregulation of steriodogensis.

Features of androgens are skin and hair greasiness,acne,adult body odour, mood swings, growth rate acceleration and genital maturation.Genitics studies explain the variation of androgen sensitivity.

Potential red flags are Advanced bone age, virilising disorders(CAH),ACTH dependent virilising tumors,exogenous exposure,GDPP,

Evaluation:

Begins with family history, examination/investigations/pubertal staging .

a: if IUGR or acanthosis nigricans(fasting insulin/glucose), b: Screening for non classic CAH and Blood pressure., c: Genital maturation merits imaging., d: Seek family history of PCOS/T2D/Arenarche., e :Breast tissue /testicular volume enlargement(central puberty)., Summarizes the principle indications for further investigations and interventions:, a: If Bone Age is normal mostly premature pubarche

b: If Bone age is > two years needs DHEA-S,A4 and testosterone, c: If DHEA-S (40—115microgram/dl,testosterone<20microgram /dl mostly Premature Adrenarche. d: If DHEA-S >115microgrm/dl or testosterone >20microgram/dl needs 17 OHP, ACTH stimulation, and or other steroid intermediates/urinary steroid profile ,DAST in case of for Cushing's syndrome / glucocorticoid resistance/virilising tumour.

Follow up: Following initial review may children with a benign condition can be followed up and reassurance regarding the likely diagnosis and its natural history .Our study showed that 80% children with no progression of secondary sexual characteristics. The study provide further evidence that approximately initial assessment of Premature adrenarche is all that is needed to reassure and discharged majority of patients. In case of diagnostic uncertainty to arrange further follow up. In majority of these cases follow up will be important to manage the patients/parents ongoing anxiety and monitoring of new signs. Initial diagnosis may be incorrect, follow up in 6—12 months for evidence of virilisation. Parents should be told the possibilities, girls carry a risk of 15—20% 0f developing PCOS(in exaggerated adrenarche), obese girls after true puberty occasionally leads to T2DM,metabolic syndrome and or non classics CAH(can be indistinguishable from PCOS).

'FAQ'S: A DOCTORS HANDBOOK.' QUALITY IMPROVEMENT AND PATIENT SAFETY INITIATIVE, CHILDREN'S HAEMATOLOGY UNIT BELFAST.

NC KIRK[1], NC Galway[1]
[1]Paediatrics, Northern Ireland Deanery, Belfast, Northern Ireland

Aims

The Children's Haematology unit (CHU) Belfast is a highly specialised unit overseeing the care of often very sick and complex patients. Each year up to 16 trainee's are involved in covering the unit out of hours (OOH.) However often only one of these trainee's will have experience actually working within the unit. We developed a concise 'CHU Handbook,' easily accessed as a downloadable PDF containing key guidelines, 'FAQ's' and advice on the care of these patients, aiming to deliver more consistent and safer patient care whilst also improving the learning experience for trainee's rotating through CHU.

Method

During a six-month period in CHU, frequently encountered clinical problems and practical questions were identified by Trainees, Consultants and the multi-disciplinary team, (MDT.) Existing unit guidelines were identified and reviewed by the MDT. This information was collated into a single handbook, available as hard copy on the unit and PDF format with the option to download onto a smart phone, making it readily accessible and easy to navigate.

Results

The 'CHU Handbook' was created. This includes;

- An overview of the ward
- Practical information on requesting specialised scans and investigations.
- Central line management
- Advice on prescribing and monitoring e.g hyperhydration fluids and chemotherapy
- Guidance on CHU specific problems e.g Tumour lysis syndrome, Transfusion thresholds, Febrile neutropenia.
- Common medications specific to CHU

Conclusions

Many trainees covering CHU OOH have little or no experience of managing such complex patients and there was little written guidance available for our unit. The CHU handbook aims to provide basic and easily accessible unit specific guidance on frequently encountered clinical problems, aiming to improve the knowledge and confidence of these trainees and as result improve the safety and quality of care these vulnerable patients receive.

'WHAT MATTERS TO ME' IN PRACTICE IN A REGIONAL CHILDREN'S HAEMATOLOGY UNIT.

NC KIRK[1], S KAPUR[1], B MCSHANE[2], A MCCARTHY[2]
[1]Paediatrics, Northern Ireland Deanery, Belfast, Northern Ireland
[2]Children's Haematology and Oncology Unit, Royal Belfast Hospital for Sick Children, Northern Ireland.

AIM: Accurate and relevant information giving is key in adaptation to a cancer diagnosis.**1,2.** We identified this as an area for improvement in the Children's Haematology Unit (CHU) Belfast and sought parental and patient opinions on the quality of information received to guide the development of a comprehensive 'CHU Handbook.'

METHOD: A patient and carer questionnaire was distributed, and review of current literature was conducted. The questionnaire identified the value patients placed on information giving and that verbal information from nurses and doctors was consistently provided. It was noted that written and online resources were under used. Numerous information sources are already available but are commonly disease or procedure specific with no allowance for variability across treatment centre's. Members of the multi-disciplinary team (MDT) met and using current literature, questionnaire results and personal professional experience a 'CHU Handbook' was created. Peer review was carried out within the MDT and by parents of children on the unit. Parents contributed 'helpful tips,' and patients contributed illustrations reflecting their experience.

RESULT: The Handbook contains comprehensive information specific to the staff, structures and facilities within our centre. It contains guidance on clinical, social, emotional and practical aspects of cancer care, influenced directly by our patient, carer and staff experience. The Handbook directs readers to other reliable sources of information as well as providing space to record additional information, practical tips, questions and reflection. Everything is contained within one document thus reducing the need for multiple leaflets.

CONCUSION: The CHU handbook is unique and specific to our unit, developed on the basis of parent and patient feedback. It focuses on the entirety of the patient and carer experience following diagnosis. It will be offered to families following initial diagnosis to help guide them through their journey on CHU.

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SUPPORTING OUT OF PROGRAM TRAINEE'S: ESTABLISHING A 'RETURN TO ACUTE PAEDIATRICS COURSE.'

NC KIRK[1], N MCCAY[1], L THOMPSON[1]
[1]PAEDIATRIC TRAINEES, NORTHERN IRELAND DEANERY

Aims

In each rotation, up to 25% Paediatric trainees in our deanery may be out of programme, (OOP.) Trainees can feel anxious, de-skilled and under-confident on returning to work.[1,2] However, there is little evidence describing these difficulties and limited targeted support available. We aimed to identify the needs and concerns of trainees returning to clinical work after a period OOP and develop a course providing targeted education and support.

Method

We conducted a literature review of recommendations and current practice in UK deaneries and colleges. An online questionnaire was sent to all Paediatric trainees within our deanery to identify issues encountered surrounding time OOP. A pilot 'Return to Acute Paediatrics' course was held in July 2015 with all trainees currently OOP invited to attend. This included short lectures on 'Hot topics in Paediatrics' and Neonatal/Paediatric simulation. The effectiveness of the programme was assessed using pre- and post-course questionnaires.

Result

7 trainees attended the pilot course (range ST1-ST8.) All trainees were OOP for maternity leave. 100% completed pre-and post-course evaluations. Feedback was positive; 100% rated the course as 'excellent' and 100% reported improved confidence in managing acute scenarios. Our online questionnaire found that many trainees with experience OOP, had concerns returning to work and felt this course would be beneficial in helping address this.

Conclusion

Returning to clinical practice following time OOP can be difficult and there is currently no targeted educational support available in our region.Our pilot 'Return to Paediatrics' course was popular with trainees, resulting in improved confidence in managing acute scenarios. The post course feedback and online questionnaire results were used to develop a bi-annual course, which is endorsed by our School of Paediatrics, and aims to facilitate a less daunting return to work.

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ADHERENCE TO DOWN SYNDROME HEALTH SURVEILLANCE:
HOW GOOD ARE WE

N Lagan[1,2], F Mc Grane[1], E Mc Molloy[1], D Mc Donald[1], J Balfe[1,2,] [1]National Children's Hospital, AMNCH, Tallaght, Dublin, [2]Cheeverstown Disability Service, Cheeverstown, Dublin, Ireland

Background: Down Syndrome is the most common congenital cause of developmental delay in Ireland. It is associated with a high number of treatable disorders. It is recognised that early intervention carries a better outcome for quality of life and life expectancy.

Aims: Review compliance to the Down Syndrome Medical Management guidelines in those patients attending a Disability service, Cheeverstown, in a comparison to those attending a secondary paediatric clinic, National Children's Hospital, Tallaght (NCH).

Methods: • Retrospective chart review of the 21 children with Down Syndrome attending Cheeverstown and a comparable group attending the general medical clinic in NCH.

• Published guidelines Medical Management of Children and Adolescents with Down Syndrome in Ireland by the Down's Syndrome Medical Interest group (DSMIG) were used as the standard.

Results: 21 charts were reviewed at each service. 57% were female. Age of children attending each service ranged from 3 months to 13 years in Cheeverstown and 6months to 15years in NCH. The median age of first medical review at Cheeverstown was 6months, range 3month to 1 year, whilst in NCH ranged 6month to 11years with a median of 20 months. Table 1 shows the compliance are to each recommended guideline. Overall our compliance is good apart from audiology screening. Neonatal screening was only implemented nationally in 2012. Prior to this many children would not receive their first assessment till after 6 months of age due to long waiting lists.

Table 1

Adherence to guidelines	Cheeverstown % (n)	Hospital Clinic % (n)
GROWTH- annual plotting of centiles	95 (20/21)	95 (20/21)
CARDIOLOGY- clinical examination & echo before 6 weeks	85 (18/21)	100 (21/21)
THYRIOD FUNCTION		
Neonatal Screening	100 (21/21)	95 (20/21)
2 yearly TFTs plus TPO ab	100 (18/18)	95 (20/21)
OPHTHALMOLOGY		
Neonatal exam	100 (21/21)	66 (17/21)
18 month-2yr formal exam	94 (16/17)	90 (19/21)
4yr Repeat exam	83 (10/12)	94 (16/17)
2yearly thereafter	83 (5/6)	100 (6/6)
AUDIOLOGY		
Neonatal screening	24 (5/12)	29 (6/21)
6-10month	47 (9/19)	66 (14/21)
18month	76 (13/17)	81 (14/21)
Yearly until 5 years	47 (8/17)	84 (16/19)
2 yearly review after age of 5	33 (2/6)	50 (3/6)
Assessment of-		
Cervical spine instability	0 (0/18)	5 (1/21)
Sleep related upper airway obstruction	55 (10/18)	81 (16/21)
Coeliac Disease	67 (12/18)	95 (20/21)
Inflammatory Arthropathy	6 (1/18)	0 (0/21)

Conclusion:

• Overall, compliance to guidelines is good.
• Poor compliance to audiology guidelines in both groups.
• Development of a pro forma to assist clinician/ nurse with assessing children on an annual basis.
• Links with audiology, ophthalmology and phlebotomy to provide "one stop clinic".
• Increasing awareness with regards the importance of screening for symptoms for OSA, arthropathy, coeliac disease, cervical instability.

MANAGEMENT OF PROLONGED SEIZURES IN UNIVERSITY HOSPITAL LIMERICK

S Lewis[1], N O'Brien[1], **S Gallagher[1]**
[1]Department of Paediatrics, University Hospital Limerick, Limerick, Ireland

Introduction: Children with prolonged seizure activity are at risk of significant morbidity and mortality. Early termination of a prolonged seizure is essential.

Aims: To describe the clinical profile of our patient population, review management and audit adherence with APLS guidelines for children with prolonged seizure, and to make recommendations for improving patient care.

Methods: HIPE database and "Therefore" patient record system were searched to identify children between 0-14 years from 1/9/14 to 1/5/16 who required medication for termination of prolonged seizure. Children with full recovery prior to hospital attendance were excluded. Medical notes of children who met inclusion criteria were reviewed, and a proforma was used for data collection.

Results: Thirty-four episodes of prolonged seizure were identified in twenty-three children, with a median age of 3 yrs(0.0136yr–12.33 yr). In 64.7%(22/34) of events, there was a history of seizures and 70.5%(24/34) had abnormal neurodevelopment. Regarding initial stabilisation, GCS was documented in 50%(17/34) of cases, temperature in 94%(32/34), glucose in 88%(30/34), and blood pressure in 55.8%(19/34). In 61.7%(21/34) oxygen therapy was documented and 23.5%(8/34) had anaesthetic review. Pre-hospital medication was given in 50%(17/34). In thirty-two episodes, patients were given in-hospital medication, with midazolam or lorazepam as first-line in 75%(24/32). 58.8%(20/32) needed a second drug and 28.1%(9/32) needed a third drug to achieve seizure control. In 10/32 episodes a non-APLS protocol drug was used although this protocol does not apply to non-convulsive status epilepticus. Time from seizure onset to adminstration of medication was documented in 35%(12/34) and seizure duration was documented in 50%(17/34). It was not possible to assess adherence to time-intervals specified by the APLS seizure algorithm due to unclear or incomplete documentation.

Conclusion: It is necessary to improve documentation of seizure duration and medication administration for accurate audit of seizure management. GCS and blood pressure should be recorded in all patients. Patient-specific protocols may benefit children with difficult to control seizurs.

BONE MARROW EXAMINATION IN THE HAEMATOLOGY/ONCOLOGY DEPARTMENT: A QUALITY IMPROVEMENT INITIATIVE

N Linnane[1], J Jones[1], C Buckley[1], A O'Marcaigh[1], J Pears[1]
[1]Haematology/Oncology , Our lady's Children's Hospital, Crumlin, Ireland

Aims:
Each child diagnosed with a malignancy will require multiple bone marrow (BM) examinations with different samples required each time. Currently, when BM examinations are booked, the specific samples are not routinely detailed.The authors aimed to carry out a quality improvement initiative designed to limit issues related to the procedure.

Methods:
As part of the St John's Ward Quality Improvement team, a sub group was created specifically to address increased incidents surrounding the BM procedure list.
The list for a six month period, June to December 2015 was reviewed. Four incidents and one 'near miss' were identified.
The sub group mapped the pathway required from booking a case on the list to a BM examination being carried out. The steps at which errors were occurring were identified. Reasons behind the errors were analysed and a suitable intervention was designed.

Results:
The step at which error is most likely to occur is at consent. Errors resulted in either a prolonged anaesthetic or a repeat anaesthetic being required.
The NCHD group responsible for consenting the patients rotate on a 3- 6 monthly basis and due to the complex nature of the individual patient protocols, more direction from senior staff is required to ensure exact sample requirements are met..

A simple check box sticker was designed with all possible samples listed.
It is proposed that a consultant or experienced staff member (specialist registrar or advanced nurse practioner) will fill in this sticker when booking a BM examination.
The case will not be booked for theatre unless this sticker is complete.

The NCHDs will take consent based on this sticker and thus the correct procedures and sampling will occur.

Conclusions:

The initiative has been introduced from July 2016. Following an initial 'settling in' period we will review the procedure list again to assess if there has been a decrease in incidents.

SUCCESSFUL PARTNERSHIP: THE EXPERIENCE OF RUNNING ORAL FOOD CHALLENGES IN A NON-SPECIALISED CENTRE THROUGH SPECIALISED SELECTION OF LOW RISK PATIENTS

LJ Ryan[1], AN Walsh[2], I Maris[3], J OB Hourihane[3], NE Lynch[2]
[1]School of Medicine, University College Dublin, Dublin, Ireland
[2]Paediatrics, Bon Secours Hospital, Cork, Ireland
[3]Paediatrics and Child Health, Cork University Hospital, Cork, Ireland

AIMS

Since 2013, oral food challenges (OFC) have been undertaken in Bon Secours Hospital, Cork (BSH) as part of a model of inter-hospital partnership with Cork University Hospital(CUH). Patients with private health insurance attending CUH are selected for OFC in BSH using patient history, skin prick testing and specific IgE. Selected patients were considered low-risk for anaphylaxis during OFC. High risk patients (with and without health insurance) had OFC only in CUH. The same challenge protocol is used in both sites.

METHODS

Retrospective review of 61 open (i.e. not blinded) OFCs in 59 patients. .

RESULTS

Out of 59 patients, 38 were male and 21 were female. The age range was 0.75 to 15.9 years and the mean age was 6.72 years. Foods used for OFC included peanut (39 OFC, 64%), tree nuts (13 OFC, 21%), sesame (3 OFC, 5%), fish (2), prawn (2), pine nut, chicken and baked egg (1 of each). Twenty eight out of 61 OFC (46%) were positive, 32 (52%) negative and 1 (2%) was incomplete . 16/28(57%) had abdominal pain and/or vomiting, 18/28 (64%) had urticarial or rash symptoms, 7 (25%) had rhinoconjunctivitis, 7 (25%) facial angioedema. 6 (21%) had mild wheeze. 27/28 children with positive OFC (96%) were given oral cetirizine, 3 (11%) IV anti-histamines, 6 (21%) nebulised salbutamol and 3 (11%) IV hydrocortisone. No child received IM adrenaline.

CONCLUSION

The rate of positive OFC in low risk children (46%) is similar to that in the general pool of children challenged in CUH, but severe reactions are rarer (no child received IM adrenaline), suggesting that patient selection is thorough and that OFC is easily performed safely in non-specialist centres. This model of partnership could be developed in other regional units in Ireland, with either of the specialist allergy centres and could also be offered to uninsured patients under appropriately funded waiting list initiatives.

AN UNUSUAL CAUSE OF FAILURE TO THRIVE

Lynch A, Pears J. Department of Oncology, Our Lady's Childrens' Hospital Crumlin, Dublin

Failure to thrive or "faltering weight" refers to sub-optimal weight gain during infancy or childhood. It is a common presentation to paediatric services but is rarely due to organic causes. Two UK based studies found substantial organic disease in only 5-10% of paediatric patients with slow weight gain.

We report a case of failure to thrive due to diencaphalic syndrome. Our patient was a 6 month old girl who was investigated for failure to thrive. At the time of her initial presentation she had no associated symptoms and clinical examination was otherwise unremarkable. Following multiple presentations to paediatric services and continued faltering weight despite normal caloric intake she was extensively investigated. Baseline bloods for common associated paediatric conditions were normal. Cranial ultrasound showed a solid bilobar mass, centred on the thalamus with appearances consistent with neoplasm. Subsequent biopsy confirmed Pilomyxoid astrocytoma (WHO Grade II).

Given the low odds of organic disease in patients with failure to thrive, most reviews do not advocate investigating patients presenting with failure to thrive in the absence of further physical signs. Our patient represents a rare case of failure to thrive due to significant underlying pathology.

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STANDARDISING PATIENT HANDOVER IN A PAEDIATRIC SETTING; A PILOT INTRODUCTION AND RE-AUDIT OF THE ISBAR TOOL

WL Macken[1], D Huggard[1], L Whitla[1], N Goggin[1]
[1]University Hospital Waterford, Dunmore Road, Waterford

Aims: This project aimed to assess handover practice, to pilot a new handover tool, to audit use of this tool and re-audit following a prolonged period of use.

Method: A literature review was performed to identify an appropriate handover tool. The 'Identify Situation Background Assessment Response/Rational' (ISBAR) framework was chosen. Handovers were assessed in comparison to this as a snapshot of current practice over a one week period. An education programme was instituted for NCHDs encouraging use of ISBAR. Handovers were re-audited one month following the initial education session. A second re-audit was carried out on a new cohort of NCHDs five months after their education.

Results: Twenty five individual case handovers were analysed pre and post education sessions. The details most poorly communicated prior to the education period were patient age and location (68% and 60%) level of concern regarding the patient (56%), whether the patient needed to be reviewed (64%) and what the plan was depending on results of review (64%). There was universal improvement in the parameters measured (table 1). The most notable improvement was 'level of concern' improving from 56% to 88%. The least improved was 'Does the child need to be reviewed?' (64% to 68%). An extra parameter 'impression' was added following the education period to encourage trainees to provide rationale for their management plans. Re-audit of handovers in July 2016 showed that although many details remained well communicated some had deteriorated significantly most notably patient's consultant (92% to 52%) and more notably 'level of concern' (88% to 20%)

Conclusion: This project effectively standardised and improved patient handover in a paediatric setting. However, re-audit suggests that these effects deteriorate over time. We suggest continuous use of pro forma grids when admitting patients and that supervising clinicians give feedback to NCHDs on an ongoing basis to maintain standards.

X-LINKED AGAMMAGLOBULINEMIA PRESENTING WITH NEUTROPENIA AND PSEUDOMONAS AERUGINOSA SOFT TISSUE INFECTIONS; TWO CASES

J MacMahon[1], M Ni Chroinin[2], J Hourihane[2], M Cotter[3], TR Leahy[1]
[1]Department of Paediatric Immunology and Infectious Diseases , Our Lady's Children's Hospital Crumlin, Dublin, Ireland
[2]Department of Paediatrics, Cork University Hospital , Cork, Ireland
[3]Department of Paediatric Haematology, Our Lady's Children's Hospital Crumlin, Dublin, Ireland

Background: X-linked agammaglobulinemia (XLA) is the prototypic B cell disorder, and typically presents with recurrent respiratory tract infections. In a minority of cases, however, it can present with neutropaenia.[1,2]
Aim and methods: We describe two recently diagnosed cases of XLA that presented with both neutropenia and Pseudomonal soft- tissue infections.
Results. Case 1: A 15 month old boy presented with fever and cellulitis in his groin. Neutrophil count at presentation was 0.1 x 10*9/L. Swabs from an ulcer at the site grew P aeruginosa. He responded well to systemic antibiotic therapy and replacement Ig therapy. His neutrophil count recovered quickly. He was subsequently found to be B-cell lymphopenic and panhypogammaglobulinemic. Case 2: A 13 month old boy presented with dactylitis and paronychia. He was neutropaenic at presentation (<0.1 x 10*9/L) and was found to be B-cell lymphopaenic and panhypogammaglobulinemic. Incision and drainage of abscess was undertaken and grew P. aeruginosa. gCSF was given to boost neutrophil production. He responded well to systemic antibiotics and surgical drainage, and is currently well on immunoglobulin replacement therapy. XLA was confirmed by genetic analysis in both cases.
Conclusion: Neutropaenia and soft tissue infections are an uncommon but well described presentation of XLA. Lymphocyte subset phenotyping and serum immunoglobulin measurement should be undertaken in these circumstances, even without a positive family history.[3]

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MRI IMAGING OF THE TEMPEROMANDIBULAR JOINT IN CHILDREN WITH JIA: A 3 YEAR RETROSPECTIVE STUDY

WA Madan[1], OG Killeen[1], E Isweisi[1]
[1]National Center for Pediatric Rheumatology, Our Lady's Children Hospital , Dublin 12, Ireland

The temperomandibular joint (TMJ) is estimated to be involved in up 70% of children with JIA (Juvenile Idiopathic Arthritis). Undetected it can result in undergrowth of the mandible and with bilateral involvement, potentially disfiguring micrognathia. MRI with contrast (MRIc) is the gold standard imaging for detecting active synovitis of the TMJ.

OBJECTIVE: 1.To estimate the percentage of active TMJ disease in our JIA population. 2. Do plain film changes of TMJ in patients with JIA correlate with positive MRI findings of active TMJ disease?
METHODS: All TMJ MRIc reports of JIA were retrospectively reviewed over a 3 year period from January 2013 to January 2016. Age, gender and subtype if JIA were documented. Active TMJ disease was defined as synovial enhancement or synovial hypertrophy post IV contrast. Plain film reports of any abnormalities such as flattening or erosion of condylar heads were recorded. Sensitivity and specificty figures were evaluated.
RESULTS: A total of 32 MRIc TMJ were performed on our patient cohort over this 3 year period. The average age was 12.4 years (range 7-18 yrs) , 22(71%) were females and 9(29%) were males. Active TMJ disease was reported in 22 of 32 (73%) on MRI which is comparable to other studies in the literature . 73% (16 out of 22) JIA patients who has had active TMJ disease on MRI had plain film of TMJs. 50% (8/16) of these patients had plain film abnomalies , including condylar flattening in 75% (6/8), erosion(s) in 12.5% (1/8) and sclerosis in 12.5% (1/8). 25% (4/16) had a normal X-ray and in 25% (4/16) the appropriate views were not obtained. The estimated sensitivity of plain TMJ X-rays for active TMJ disease on MRI is 66.7% , with a positive predictive value of 80% . The specificity of normal TMJ X-ray is 66.7%, negative predictive value 50%.

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MOVING FROM EXPERIENCE TO PRACTICE: EVIDENCE-BASED UPDATES OF THE NEONATAL RESUSCITATION PROGRAM 7TH EDITION

E Maduekwe
[1]Pediatrics, Stony Brook Children's Hospital, Stony Brook University Hospital, Stony Brook, USA

Background: Caring for newborns in the delivery room requires up to date knowledge of neonatal resuscitation. As part of the effort to ensure evidence-based guidelines for Neonatal Resuscitation Program (NRP), the American Heart Association (AHA) and the American Academy of Pediatrics (AAP) has recently released advanced notification of substantive changes in October 2015 that appeared in the 7th edition NRP. This should be standard practice by 1st of January 2017.
Objective: To ensure that all NRP providers are educated in the 7th edition of the NRP; and will be able to list three key changes in NRP as a result of the new guideline, summarize the changes in practice of a hospital based NRP, and identify two aspects of an implementation plan that ensure clear communication, effective teamwork and patient safety.
Methods: The pertinent changes to NRP will be highlighted through presentation and discussions including the scientific evidence. The new 7th edition NRP will include the revisions in: initial steps of newborn care, oxygen use, positive pressure ventilation, endotracheal intubation and laryngeal masks, chest compression, medication, thermoregulation and stabilization of babies born preterm, and ethical issues in initiation and discontinuation of resuscitation, as well as care at the end of life.
Results: The evidence-based review by AHA/AAP has led to the following specific changes in the NRP flow diagram: beginning resuscitation with team briefing and equipment check, maintaining the newborn's normal temperature during resuscitation, considering using a cardiac monitor (ECG) when PPV begins, ensuring ventilation that inflates and moves the chest, intubation prior to beginning chest compressions, recommendation to use cardiac monitoring to accurately assess heart rate during chest compression, and ending the resuscitation with team debriefing.
Conclusion: The practice of delivery room resuscitations should follow evidence-based medicine. Improved outcomes and improved communication are at the crux of these recommendations.

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A 14 YEAR REVIEW AND UPDATE ON ANNUAL SCREENING FOR AUTOIMMUNE DISEASE IN TYPE 1 DIABETES IN CHILDHOOD

KE Maduemem[1], E Hennessy[1], L Stallard[1], C Cronin[1], A Bradfield[1], M Bradley[1], SM O'Connell[1], SMP O'Riordan[1]
[1]Paediatric and Child Health, Cork University Hospital, Cork, Ireland

AIMS: To re-audit screening practices in this population. There is a well established association between Type 1 diabetes mellitus (T1DM) and autoimmune diseases; screening for the latter is essential in line with NICE and ISPAD.
METHODS: A re-audit was undertaken, comparing the two time periods: T1: 2002-2012 Vs T2: 2012-2016. TIDM screening was done at diagnosis with: GAD65, IA2, IAA and islet cell antibody. Coeliac disease defined as positive EMA and tTG >30. Autoimmune thyroid disease (AIT) was defined as TSH >10 with low T4 <11.
RESULTS: In time period 1 (T1), data was available on 339 TIDM children (47.3% males), mean age 13.2 years +/-4.12: versus time period 2 (T2): 327 children (56% males) with mean age 11.6 years +/-1.5. Coeliac screening within T1 in 280 children (83.8%), identified 8.2% newly diagnosed coeliac disease. In T2, 316 (96.6%) children were screened, with 6.3% diagnosed. In T1, 305 (91%) children were screened for AIT: this is compared to 322 (98%) in T2. There was a 4.3% prevalence of AIT in T1 versus only 1.2% in T2. 26% were screened for anti TPO with 20.7% positive in T1 and 57.5% screened in T2 with 16% positive. Screening for antibodies: GAD65 in 24.2% (T1) and 94% (T2); Islet cell antibodies in 10% (T1) and 20.8% (T2); Insulin antibodies in 4.7% (T1) and 13.2% (T2); IA2 in 6.5% (T1) and 95% (T2). At least 28% of children had been screened for one TIDM antibody during T1 and 98% during T2.
CONCLUSION: In this childhood population of TIDM, there is a high prevalence of coeliac disease (6.3-8.2%) and a lower diagnosis of autoimmune thyroid disease (1.2-4.3%). There has been a significant improvement in the antibody screening for T1DM which is in line with international guidelines.

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Poster No.92

"EMERGENCY DEPARTMENT VISITS AND OUTCOMES AMONG PAEDIATRIC PATIENTS IN WEXFORD GENERAL HOSPITAL"

DR. ATIF MAJID[1], DR. EVA DOBOS[1] , DR. M. AZAM[2]

[1] Paediatric Registrar, Wexford General Hospital, [2] Consultant Paediatrician & Clinical Lead, Wexford General Hospital

AIMS: To assess the number of Paediatric patients presenting to A&E department from different referral sources and to see their admission to discharge ratio.

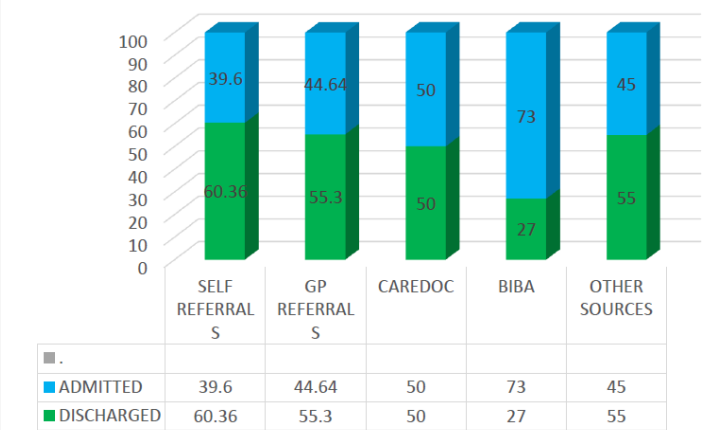
METHODS: 300 randomly chosen patients who presented to Paediatric A&E in Wexford general hospital, were assessed based on their source of referral and their outcome after being seen, assessed and evaluated in the A&E department.

RESULTS:

Total number of patients presenting to the Paediatric A&E during the study period were 300, out of which 136 (45.3%) were admitted while 164 (54.6%) were discharged.

We discussed the probability of the admission among the different referral methods:

- 111 patients were self referrals, 44 required inpatient care (39.64%) and 67 patients were discharged (60.36%)
- 112 patients were referred in by their GP, 50 were admitted (44.64%) and 62 discharged (55.36%)
- 48 patients were referred in by CareDoc or Doctor On Call, 24 patients needed admission (50%), 24 were discharged (50%)
- 18 patients were brought in by the Ambulance services, 13 were admitted (72.22%) and 5 discharged (27.78%)
- 11 patients were referred by other services, like Public Health Nurse or different specialities within the Emergency Department, 5 patients needed admission (45.45%), 6 were discharged (54.54%)



CONCLUSION:

- An opportunity to assess the source of referrals to our hospital and their outcomes.
- Highlights the fact that every patient presenting to the A&E should be carefully assessed regardless of the source of referral.

Poster No.93

EVALUATING THE BURDEN OF ROTA VIRUS IN PAEDIATRIC UNIT AT WEXFORD GENERAL HOSPITAL.

Dr. Atif Majid, Ms. Stacey Krauss, Dr. M. Azam, Wexford General Hospital

Aims:

Rotavirus has been found to be the most common cause of gastroenteritis in Irish hospitals when an organism can be identified, and it leads to 1% of admissions in two major pediatric hospitals[1,2]
The aim of this is to identify the number of rotavirus-positive diagnoses in Wexford General Hospital in 2014 and to review the health care costs associated with an admission for rotavirus.

METHODS:

The microbiology lab at Wexford General Hospital was contacted to obtain rotavirus testing data from the January 1, 2014, to December 31, 2014.Data collected from the lab included the number of rotavirus tests obtained and the results of those tests in children less than 5 years of age. Estimated costs per hospitalization due to rotavirus were found to be 728.40 euro in a previous study, so this was used to calculate estimated costs at Wexford General Hospital. The estimated cost per hospitalization was multiplied by the number of rotavirus-positive gastroenteritis cases.

RESULTS:

In 2014, the number of rotavirus tests requested in children less than 5 years of age was 528. Of the 528 tests, 59 were positive for rotavirus. Thus, 11.2% of rotavirus tests were found to be positive.
Estimated costs due to positive Rota virus related admissions in 2014 was calculated to be 42,975.60 euros

CONCLUSION:

- Rotavirus a major cause of gastroenteritis in Ireland
- Leads to high national medical costs and many hospital admissions.
- Implementation of the rotavirus vaccine may decrease hospital admissions and medical expenditures related to rotavirus-positive gastroenteritis and improve the quality of life of many patients.
- Implementation of the rotavirus vaccine in the United States has led to a 60-75% reduction in rotavirus hospital admissions and decreased medical expenditures substantially[3].

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RE-AUDIT; INTRA DEPARTMENTAL AUDIT IN IMPROVING QUALITY OF WRITTEN INPATIENT DRUG KARDEX, IN WEXFORD GENERAL HOSPITAL, COUNTY WEXFORD, REPUBLIC OF IRELAND.

Dr. Atif Majid, Dr. M. Azam, Wexford General Hospital, Wexford

AIMS:

1. After the successful completion of the first Audit (2014-2015) in this series, we had highlighted the weak areas in our departmental Kardex writing, and had identified major discrepancies.

2. In the light of the previous audit we chalked out a plan to educate the doctors involved and so improve the overall quality of the inpatient Kardex.

3. The aim this year was very clear. To calculate and validate the findings of the previous audit and to further enhance and improve the Inpatient Kardex by process of continuous monitoring.

METHODS:

1. Inpatient drug kardex sheets were audited for the months of July-November 2015. (100 in total for Department of Paediatrics & Neonatology)
2. Drug kardex would be assessed against predetermined standards for good-quality prescribing.

RESULTS: (Department of Paediatrics & Neonatology, July-Nov 2015)

1-Patient sticker present--------- 98 %
2-Date written---------- 96 %
3-Route of administration------- 95 %
4-Dose mentioned---------- 100 %
5-Eligible prescription---------- 84 %
6-Allergy mentioned ---------- 68 %
7-Eligible signature---------- 78 %
8-Bleep no mentioned---------- 88 %
9-Generic Name ---------- 60 %
10-MCRN written---------- 40 %

CONCLUSION:

As most of the deficiencies identified in the previous audit were worked on and improved, we came across new areas that need improvement.

Most of the NCHDs are compliant with preset standards of effective drug kardex making. Least compliance was seen with legibility of signatures by NCHDs and mentioning of medical council number
Our plan is to re do this audit next year (2016-2017) to measure the effectiveness of changes implemented. Serial audits about the quality of prescribing on hospital drug kardex will be carried out and they can rapidly identify the extent of deficiencies in prescribing practice, facilitate interventions specifically designed to address these deficiencies and monitor their influence.

GOOGLE IT ; ACCESSIBILITY TO HIGH QUALITY INFORMATION ON THE INTERNET FOR PARENTS WITH CHILDREN WITH FEVER AND RASH

Dr. Atif Majid[1], Dr. M. Azam[2]
[1] Registrar Paediatrics, Wexford General Hospital
[2] Lead Consultant Paediatrician, Wexford General Hospital

Aims:

To evaluate the quality of online information relating to childhood fever and rash, as they are amongst the most widely searched topics on Google when it comes to sickness in children in Ireland.

METHODS:

We identified 150 websites by searching "Child with fever and rash" in the 5 most popular internet search engines, Google, Bing, Yahoo, MSN, Ask.com. Websites were examined for readability by measuring the Flesch Reading Ease score, the Flesch-Kincaid Grade level, and the Gunning Fox index.
Quality of the websites was measured by the Discern instrument, The journal of american medical association(JAMA) benchmark criteria, and Health On the Net(HON) Foundation certification.

RESULTS:

- 50 individual URLs were analyzed
- Overall quality was average to poor, when it came to medical related information, with the average discern score being only 38.5 (0-80)
- HON code certification did not correspond to significantly higher Discern Score.
- Similarly, websites authored by physicians did not correspond to significantly higher discern score.

CONCLUSION:

- Information related to chilhood ilnesses is of low quality and frequently written in too high a standard for general population. There are instruments available to evaluate these online resources. We, as paediatric doctors have a responsibility to recommend accurate patient centred online websites and thus ensure parents receive reliable information regarding their childrens condition and treament options.

IMPROVED DIAGNOSTIC PATHWAY FOR PAEDIATRIC METABOLIC DISEASES

RM Mannion[1], OB Blake[2], BL Linnane[3], AM Murphy[3]
[1]Paediatric Department, University Hospital Galway, Galway, Galway
[2]Biochemistry Laboratory, University Hospital Limerick, Limerick, Limerick
[3]Paediatric Department, University Hospital Limerick, Limerick, Limerick

Aim

To improve the diagnostic pathway for paediatric patients with suspected metabolic diseases.

Background

Inborn errors of metabolism (IEM) account for substantial morbidity and mortality with an overall incidence that is between 1 in 800 to 1 in 2500 births (1,2). Early recognition, evaluation, management and referral lead to optimal outcomes and prevent complications which include acute metabolic decompensation, progressive neurologic injury, or death (3). The Laboratory in Temple Street receives referrals nationally and performs a number of metabolic investigations for patients with suspected metabolic disorders.

Methods

In 2012, the stakeholders in the Paediatric Metabolic team and the Biochemistry Laboratory designed a request form specifically for the investigation of metabolic disease.. The new pro-forma was designed to provide all relevant clinical information that would allow for more targeted laboratory investigations. We will illustrate with two examples; a 15 month old boy who presented with afebrile seizure and an 8 month old girl who presented with feeding difficulties, and hepatomegaly. The ultimate diagnoses were Tyrosinemia and Propionic Aciduria respectively.

Results

- Increase referral acceptances.
- Increased patient information led to improved communications between laboratories and allowed for more focused investigations.
- Reduced resources including reduced expenditure and time.

Conclusion

The implementation of the new pro-forma has facilitated a more effective and timely diagnostic pathway for paediatric patients with metabolic diseases, and has optimised laboratory resources.

1 Incidence of inborn errors of metabolism in British Columbia, 1969-1996. 2 The incidence of inherited metabolic disorders in the West Midlands, UK. 3 Approach to the diagnosis of inherited metabolic disease. Champion MP

RISK OF ANAPHYLAXIS IN IRISH SCHOOLS

I Maris[1,2], J Hourihane[1,2]
[1]Department of Paediatrics and Child Health, University College Cork, Cork, Ireland
[2]Department of Paediatrics, Cork University Hospital, Cork, Ireland

Background:According to EAACI's Taskforce on Community, the most common location for anaphylaxis to occur in the community is school or pre-school, accounting for 16–22% of reactions.

Aim: To assess the risk of accidental reactions in schools in Ireland, in order to review support strategies for those working in schools and early-childhood settings.

Method: As part of the NORA European Anaphylaxis initiative, we undertook a project on the incidence of anaphylaxis in Irish children. Location of anaphylaxis was analysed along with a detailed illustration of demographics, age-dependent triggers, and presentation symptoms.

Results: 183 cases of anaphylaxis in children (0 – 16 years) were reported in Ireland between August 2013 and May 2015. Mean age was 5.76 years (range 0.23 to 15.79 years). Most events happened at home (64.5%) and in relative's or friend's houses (12%), followed by public places (restaurants, cinema, airport 7.1%), outdoor locations (countryside, parks 5.5%), and school/pre-school (5.5%). Food elicitors were reported in all cases of anaphylaxis in schools.

Conclusion: Irish schools seem to be "allergy-safer" due to nearly universal family provision of school meals, compared to other European countries practices of school canteens and food shops.

CAN EARLY CHANGES IN CLINICAL CONDITION PREDICT DURATION OF ANTIBIOTIC THERAPY IN SUSPECTED NEONATAL SEPSIS?

M McGovern, P Morrissey, E Ryan
[1]Department of Paediatrics and Neonatology, University College Hospital Galway, Galway, Ireland

Aims

Advances in detection and treatment of neonatal infection have meant that outcomes have improved greatly over time1, however there remains some debate as to the exact duration of empirical antibiotic therapy in suspected neonatal infection2. In most centres, empirical IV antibiotic therapy is continued until laboratory investigation has confirmed that blood culture testing is negative, usually between 48 and 72 hours. Occassionally antibiotic therapy is continued for longer durations due to findings on the initial sepsis evaluation or due to clinical concerns regarding the neonate.

We designed this retrospective, observational study to investigate whether early changes in clinical condition in term neonates admitted for evaluation of sepsis can accurately predict those infants who require prolonged durations of antibiotic therapy.

Methods

We identified neonates >35 weeks who were admitted to the neonatal unit with for evaluation of sepsis over a 1-year period (Jan 2015-Jan 2016). We then reviewed the results of their sepsis evaluations, duration of antibiotic therapy and the vital signs recorded on admission and after 12 hours of antibiotic therapy. Paired sample t testing was used to assess for changes in vital signs on admission and after 12 hours of antibiotic therapy. Mean differences were compared between groups using unpaired t testing.

Results

96 term infants were admitted solely for evaluation of potential infection over the period studied. 80 had standard antibiotic regimens; 16 had prolonged antibiotic courses of greater than 48 hours duration. Results are presented on changes in vital signs over time between groups and differences in sepsis evaluation results.

Conclusions

Early changes in clinical condition may be of use in determining those infants at risk of requiring prolonged duration of antibiotic therapy.

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THE NATIONAL REGISTER FOR CHILDREN WITH DOWN SYNDROME

EFR Roche[1], EJM Molloy[2], FCMG McGrane[2]
[1]Department of Paediatrics and child health, Trinity College, The University of Dublin, Tallaght Hospital, Dublin, [2]Department of Paediatrics and child health, Trinity College, The University of Dublin, Tallaght Hospita, Dublin, [3]Department of Paediatrics and child health, Trinity College, The University of Dublin, Tallaght Hospita, Dublin

Institutions:
Discipline of Paediatrics and Child Health, Trinity College, the University of Dublin; Tallaght Hospital, Dublin 24; Neonatology, Our Ladys Children's Hospital Crumlin; Coombe womens and Infants Childrens Hospital, Dublin 8; Downs Syndrome Ireland

Aims:
We aimed to accurately define the incidence, morbidity and mortality of Down syndrome (DS) in Ireland and to provide parents with evidence based health information e.g. the frequency of associated malformations or illnesses to enhance counseling regarding prevalence in DS.

Methods:
A parent information leaflet, consent and data collection form were approved by ethics committees and all 19 maternity hospitals in Ireland were included. Parents of babies born after January 1st 2015 were invited to take part in the study and the data collection form was completed by the health care team and forwarded to the researcher. In addition the maternity centres were requested to record the number of persons who declined to participate. Data will be compared with EUROCAT data of reported cases of DS annually to measure case ascertainment parents were consented to be contacted by the researcher on an annual basis.

Results:
Forty-two children were enrolled on the register over 18months with the following issues: prenatal diagnosis (n=9); cardiovascular (n=26); Haematological (n=1); respiratory (n=7) and 2 babies died. EUROCAT data from 2014 showed an incidence of 1 in 444 live births which gives an estimated 168 babies born with DS per annum and indicates current underreporting to the National Register.

Conclusion:
The Down Syndrome National Register will advance our knowledge, enhance and inform the care we provide to those with Down syndrome. It will enable healthcare practitioner's provide parents and service providers with evidence based estimates regarding prevalence, patient demographics and also health and wellbeing.

PAEDIATRIC SEPSIS MORTALITY IN A SINGLE CENTRE OVER A 7 YEAR PERIOD - A RETROSPECTIVE REVIEW

KN McCarthy[1,2], AJ Nicholson[1]
[1]Department of Paediatrics, Temple Street Children's University Hospital, Dublin 1, Ireland
[2]National Paediatric Mortality Registry, Temple Street Children's Hospital, Dublin, Ireland

Aims

The aim of this study is to review patient characteristics, diagnosis and management in cases of sepsis mortality ina tertiary paediatric hospital over a 7 year period.

Methods

We undertook a retrospective review of registered deaths in children in Ireland from 2006-2012. 523 deaths were recorded as due to sepsis. Of these, 434 were excluded as they were cases of neonatal sepsis/occurred in patients with underlying conditions. The remaining 89 were included 22 of which were registered in TSCUH.

Results

The medical records for 17 or the 22 were available. The age range was from 1-143 months (mean 32.2 months). 8 (47%) were admitted via ED and 9 (53%) were transferred to ICU from another hospital. The duration of admission ranged from 0 – 250h (mean of 20.5h). 76% had a duration of admission <24 hours. The most common diagnoses following death were invasive pneumococcal disease (35%, n=6), meningococcal septicaemia (29%, n=5) and bronchopneumonia (12%, n=2). An organism was identified on culture/PCR in 82% (n=14). The organisms identified included *Streptococcus Pneumoniae* (35%), *Neisseria Meningitidis B* (29%), *Salmonella/Rotavirus* (6%), *E. Coli* (6%), and *Adenovirus* (6%).
All elements of the paediatric sepsis 6 bundle were recorded in 29% of patients (n=5). Within the first hour oxygen was administered in 66% (n=11), IV access obtained in 100%, IV broad spectrum antibiotics in 46% (n=7), IV fluid resuscitation in 86% (n=13) and the involvement of a senior clinician documented in 60% (n=9).

Conclusions

Sepsis mortality remains an important concern in paediatrics. In this series the full sepsis 6 protocol was completed in 29% of cases with just 46% receiving IV antibiotics <1h highlighting the importance of prompt recognition and management of suspected sepsis.

TRENDS IN HOSPITAL ADMISSIONS DUE TO VARICELLA INFECTION IN IRISH HOSPITALS: 2005-2015

KN McCarthy[1,2]
[1]Department of Paediatrics, Temple Street Children's University Hospital, Dublin, Irealnd
[2]Hospital Inpatient Enquiry System, Healthcare Pricing Office, Dublin , Ireland

Aims

We sought to evaluate trends in hospital admissions for patients with any listed diagnosis of varicella using the Hospital In-Patient Enquiry System.

Methods

The Hospital Inpatient Enquiry System was evaluated from 57 Irish hospitals from 2005 to 2015 for patients admitted with any listed diagnosis of Varicella. Data recorded included principle diagnosis, average length of stay, age distribution, secondary diagnoses, and principle procedure. Statistical analysis was carried out using Prism 6 software. Trends were examined using logistic regression analysis.

Results

In total there were 2487 admissions with a principal diagnosis of primary varicella zoster infection to Irish public hospitals from 2005 to 2015 inclusive. The total number of admissions did not significantly increase from 2005-2015 (r^2=0.2, p=0.16). The average number of admissions annually was 226. Of those, 81% (n=2015) were in the <18 year age group and 19% (n=472) were in the >18 year age group. Only admissions in the 5-9 year age group increased significantly over the study period (r^2=0.6, p=0.006). Of the total population 2.5% (n=62) required ICU admission with an average length of stay of 26 days. Of those who were not admitted to ICU the average length of stay was 4 days.
The most commonly listed secondary diagnoses included cellulitis (n=246, 24.6%), volume depletion (n=194, 19%) and streptococcal infection (n=145, 14.5%).The number of admissions due to streptococcal infection and cellulitis significantly increased over the study period with r^2=0.59 (p=0.005)and r^2=0.84 (p<0.0001) respectively.

Conclusions

Varicella represents a significant burden on Iris healthcare with on average 226 admissions per year. 2.5% of patients require ICU admission and have a protracted clinical course with an average length of stay of 26 days. In this study the total number of varicella related hospital admissions did not significantly increase from 2005-2015 however there was a significant increase in secondary complicating diagnoses including cellulitis and streptococcal infection.

SAFETY STANDARDS IN PAEDIATRIC ORAL FOOD CHALLENGES (OFCS)

K McConnell[1], R Bates[2], S Beattie[2], B O'Connor[2]
[1]Paediatrics, Royal Belfast hospital for Sick Children, Belfast, Northern Ireland
[2]Paediatrics, Ulster Hospital, Belfast, Northern Ireland

Aims

The double-blind placebo controlled oral food challenge is the gold-standard for diagnosing food allergy.[1] In clinical practice this is difficult to replicate and open OFCs are sufficient to confirm or refute a diagnosis.[2] During a challenge strict safety standards must be adhered to given the potentially serious nature of food allergy. We aimed to determine safety standard adherence in relation to the food challenge protocol in the Ulster Hospital, Dundonald and Altnagelvin Hospital, Londonderry.

Methods

A retrospective case note review was performed. Forty patients were randomly selected from a database of challenges recorded from January 2013 to November 2015 at the Ulster Hospital. Two were excluded on the basis of incomplete records. Data from January to December 2013 provided 50 Paediatric food challenge records at Altnagelvin Hospital.

Results

Both groups had similar demographics (male predominance of 57% and co-existing eczema, asthma and allergic rhinitis in one third). Twenty-two patients in each group carried an auto-adrenaline injector. Safety standard adherence was below 100% expected, see table.

	Ulster Hospital	Altnagelvin Hospital
Documentation	**Percentage completed**	**Percentage completed**
Auto-adrenaline injector	14 (64%)	9 (41%)
Medical check	36 (95%)	31 (43%)
Pre-challenge consent	31 (82%)	47 (98%)
Pre-challenge drug doses	5 (13%)	42 (88%)
Observations	31 (82%)	47 (98%)

Arrangements for follow up were noted for 79% of challenges in the Ulster and 33% in Altnagelvin. A post challenge information leaflet was provided in 100% in Altnagelvin compared to 47% (Ulster).

Conclusion

The expected food challenge safety standard rate of 100% was achieved once (post challenge information leaflet distribution in Altnagelvin). There were omissions in crucial risk management areas in both groups. In response to this review, the Ulster unit has developed a OFC pathway through its quality improvement initiative to ensure safety standards are met. This could potentially be implemented regionally to ensure standardisation.

References 1. Sampson H. Use of food-challenge tests in children. Lancet 2001;358: 1832-1833 2. Roberts S. Challenging times for food allergy tests. Archives of Disease in Childhood 2005;90(6): 564-566

VARIATION OF MEDICAL INTERVENTION IN THE LATE PRE-TERM INFANT ON THE POSTNATAL WARD

McCormack S., Casey S., O'Connor P.
Coombe Women and Infants University Hospital, Dublin

BACKGROUND:
Late pre-term infants are physiologically and metabolically immature thus the challenge of postnatal adaptation is met with such problems as thermoregulation, immaturity, hypoglycaemia, hyperbilirubinemia and feeding problems. Their care is optimised by guidelines on need for frequent medical review, regular vitals check and glucose/SBR /feeding monitoring.

AIMS:
To describe the current guidance in use in our institution for the postnatal management of the late pre-term infant and audit the management of these infants on the post natal ward.

METHODS:
Retrospective review of the records of infants born from 34 +0 to 36 +6 weeks gestation from 1st January to 1st March 2015 who were transferred to the postnatal ward post delivery. Current guidelines on their management was reviewed and adherence to these guidelines was examined.

RESULTS:
44 late preterm infants who delivered in the studied period were transferred to the postnatal ward. (3.3% of hospital wide births for the period). Average birth weight was 2686g . Criteria for SCBU/HDU adherence was 100%, glucose measurement 98%, temperature monitoring 93%. 20.5% of infants had hypoglycaemia necessitating review. Overall 32% of infants needed frequent medical review, half of whom were admitted to the unit.. Compliance to post discharge follow up guidelines was poor, only 70% had term check appointments, 40% had 6 week appointments. Guidelines for 4 hourly observations review were adhered to in 91% of indicated cases, but 23% of all infants observed 4 hourly were never indicated.

CONCLUSION: This audit demonstrates variation in management and deviation from guidance. An improved algorithmic guideline is required to optimise care of the preterm infants on the postnatal wards. A fulltime postnatal liaison midwife/nurse and/or establishment of the post natal ward round will lead to improved quality of care for our late preterm infants in the early neonatal period.

AN AUDIT OF PNEUMOTHORACES IN THE NEWBORN POPULATION OF A TERTIARY UNIVERSITY HOSPITAL

A McGrath[1], S Govender[1], J Miletin[1]
[1]Department of Neonatology, Coombe Women and Infants University Hospital, Dublin, Ireland

Aims:
Pneumothorax in neonates is widely described. Our aim was to evaluate characteristics, predisposing factors, presentation and management of pneumothorax in neonates.

Methods:
A retrospective chart review was conducted of neonates diagnosed with pneumothoraces in the Neonatal Intensive Care Unit in a tertiary university hospital from January 2010 until September 2015. Pneumothorax was defined by air in the pleural cavity confirmed by chest radiograph. Neonates transferred from other centres were included.

Results:
A total of 134 infants were identified with a mean of 23 pneumothoraces per year. 63% were term infants and 74.6% were male. 51% were left sided, 22% were right sided and 27% were bilateral. After birth, 63% required respiratory support such as oxygen, positive end expiratory pressure, intermittent positive pressure ventilation or intubation. Respiratory distress syndrome (37%), transient tachypnoea of the newborn (10%) and meconium aspiration syndrome (10%) were other risk factors. 71% were symptomatic in the first hour of life. 64% were ventilated at presentation. 31% required chest drain insertion while 54% required oxygen only.

Conclusions:
Incidence of pneumothorax was higher in term neonates. Those requiring respiratory support at birth or mechanical ventilation were more likely to have a pneumothorax. Management was conservative in 69%.

FEBRILE INFECTION-RELATED EPILEPSY SYNDROME (FIRES) – A CASE REPORT

R McGrath, R Manning, J McHugh, D Webb
Department of Neurology & Clinical Neurophysiology, Our Lady's Children's Hospital, Crumlin, Dublin

Background: Febrile infection-related epilepsy syndrome (FIRES) is a catastrophic epileptic encephalopathy of school-age children. The natural history follows three phases: an initial phase of apparently innocuous febrile illness, shortly followed by an acute phase of frequent focal seizures progressing to refractory afebrile status epilepticus, and a final chronic phase characterised by drug-resistant epilepsy and impaired cognition.

Case Report: A neuro-developmentally normal 7-year old boy, with no significant past medical history presented in status epilepticus, following 3 days of fever, abdominal pain and vomiting. EEG demonstrated epileptic burst suppression. The seizures were refractory to multiple anti-epileptic drugs (AEDs), and he was placed in therapeutic burst-suppression coma. Intravenous immunoglobulin, plasma exchange and the ketogenic diet did not diminish seizure frequency. No aetiology was determined despite extensive infectious, immune, metabolic, genetic, and neuro-radiological testing. Brain biopsy was also normal. General anaesthesia was weaned after 46 days of burst suppression. At this point seizure burden had greatly decreased, and the patient became more alert. Tracheostomy and percutaneous endoscopic gastrostomy feeding were required. After 114 days in PICU, he was discharged to transitional care. He could not fix or follow and could not obey one-stage commands.

Discussion: The cause of this rare entity is unknown although autoimmune or inflammatory mechanisms have been proposed. The current literature suggests that the epileptic process in FIRES may be self-limiting, as there is no evidence that any of the AEDs or other immunomodulatory therapies actually reduce seizure load, or shorten the duration of the acute phases. Ketogenic diet is efficacious in some reported cases. Generally outcomes are very poor, with the majority of children left with refractory epilepsy and cognitive impairment.

References:

1. U. Kramer, C.-S. Chi, K.-L. Lin et al., "Febrile infection- related epilepsy syndrome (FIRES): pathogenesis, treatment, and outcome: a multicenter study on 77 children," *Epilepsia*, vol. 52, no. 11, pp. 1956–1965, 2011.

2. R. H. Caraballo, G. Reyes, M. F. L. Avaria et al., "Febrile infection-related epilepsy syndrome: a study of 12 patients," *Seizure*, vol. 22, no. 7, pp. 553–559, 2013.

ESTABLISHING THE JUNIOR MEMBER FORUM IN THE PAEDIATRIC DEPARTMENT – ALTNAGELVIN AREA HOSPITAL

D MCKENNA, M MCDOWELL, N CORRIGAN
[1] PAEDIATRIC DEPARTMENT, ALTNAGELVIN AREA HOSPITAL, LONDONDERRY, N.IRELAND

Aims

The aim of this junior medical forum is to gather ideas from junior paediatric medical staff to improve the services we offer to patients and others within the hospital. It was established in May 2016. Junior doctors working on the front line are able to identify from experience what improvements could be made to services to enhance patient safety and to provide a better working environment.

Methods

The group of enthusiastic junior doctors from foundation year to senior registrars meet monthly. The dates of the meeting are sent out in advance. The aim of the forum is to identify and consider any improvements to patient care and to offer considered solutions as to how these could be implemented. The outcomes are then communicated to consultants and are then circulated to all medical staff.

Results

In all forums 53% of all junior staff have attended. In the first meeting seven items were discussed, leading to two quality improvement projects. In the second meeting eight items were discussed, leading to three ongoing projects. A feedback survey has since been distributed to junior staff. Thus far 100% of respondent's feel comfortable providing feedback in this forum and believe this platform empowers staff to suggest and implement ideas for future projects. Examples of quality improvement projects include postnatal handover, distribution and completion of discharges and the facilitation of a registrar present in the admissions unit. Other areas under improvement include changes to the junior staff rota and possible new referral criteria for our day-case unit.

Conclusions

The activities of the junior member forum are contributing significantly to services developed within the paediatric department. The forum has empowered junior staff to take ownership of the projects discussed thus enhancing patient safety and the development of leadership and management skills of the members.

Poster No.107
US Travel Award Winner

"BRONCHIAL CARCINOID TUMOR IN PEDIATRICS: A CASE REVIEW AND DISCUSSION OF THE LITERATURE"
Primary Author: Dr. Virginia Alice Miller, D.O.
Additional Authors: Dr. William O'Connor, M.D.

Bronchial carcinoid tumor (BCT) is recognized as the most common *primary* pulmonary malignancy in children, though overall primary pulmonary tumors are rare in pediatrics, averaging only 16 cases per year in the United States. BCT has no gender distinction, occurs in late adolescence (range: 8-20 yrs), and presents with symptoms related to obstruction, like cough, wheezing, pleuritis, and recurrent pneumonias. BCTs rarely(<5%) exhibit features of classic carcinoid syndrome.

We present a 13 year old Caucasian female with recently treated streptococcal pharyngitis, and lingering symptoms of fever (103˚C) and cough, unresponsive to antibiotics. CT showed a right sided lobar consolidation, concerning for pneumonia or congenital cystic adenomatoid malformation, and subsequent bronchoscopy revealed a luminal mass (1.7 cm) obstructing the right lower lobe main bronchus. Biopsy demonstrated typical carcinoid features, absent mitosis or necrosis, and, all serum and urine carcinoid markers were negative. Due to the location, a complete lobectomy was performed with negative margins, and no additional therapy was recommended.

BCT is a slow-growing tumor which arises from neuroendocrine Kulchitsky cells, found within normal respiratory epithelium. The tumor forms a polypoid bronchial lesion with or without transbronchial or extra-bronchial extension. Early diagnosis is a challenge due to the nonspecific nature of symptoms, variable response to antibiotic treatment prior to detection, and overall rarity of the lesions. Because metastatic tumors are the most common of all childhood lung malignancies, Wilm's, Ewing's, and osteosarcoma are foremost in the differential.

As with most tumors, early detection with bronchoscopy allows for conservative management with parenchyma sparing resections that may preserve lung function and facilitate recovery. These lesions are often diagnosed months to years post symptom onset, so detection with early bronchoscopic intervention is recommended in the setting of recurrent pneumonia, . Despite delay in diagnosis, when treated with complete resection, BCT has a 0% recurrence rate, and an overall survival of 95-100% without additional treatments.

OUTPATIENT PROLONGED JAUNDICE: A QUALITY IMPROVEMENT STUDY IN A TERTIARY NEONATAL CENTRE

CM Moore[1], J O'Loughlin[2], BC Hayes[1]
[1]Neonatology, Rotunda Hospital, Dublin 1
[2]Laboratory Medicine, Rotunda Hospital, Dublin 1

Background and Aims: Prolonged jaundice and the resulting investigations were common in the POPD and an audit completed January 2015 demonstrated the workload resulting from this as well and questionable adherence to NICE guidelines. Reaudit was undertaken to reassess adherence to NICE guidelines after interventions were performed.

Methods: Compliance with NICE and BSPGHAN guidelines was audited in October 2014 and results demonstrated some deficiencies in the completeness of work-up in babies with prolonged jaundice. A proforma was designed and its use was encouraged with education sessions for involved members of staff. The audit loop was closed with reaudit in March 2016. Cases for audit were identified by interrogating the laboratory system and chart review was undertaken. Results were analysed using Microsoft excel.

Results: A total of 81 cases were analysed, 37 prior to the intervention and 44 after intervention. The proforma was found in 47% of charts after the intervention.

Table 1
66% of patients reached 78% compliance with standards on reaudit

Conclusions: The intervention (education and proforma) improved quality of investigations for prolonged jaundice and can help to ensure that all babies investigated for prolonged jaundice are investigated according with standards.

THE INTRODUCTION OF A PAEDIATRIC EARLY WARNING SCORE (PEWS) INTO A PAEDIATRIC WARD OF CORK UNIVERSITY HOSPITAL

Eoin Kieran Murphy MB, BCh, BAO, Cathal O'Connor, Marie Watson, Deirdre Murray
University College Cork, Cork University Hospital, Wilton, Cork, Ireland.

Background: Paediatric Early Warning Score (PEWS) systems have been designed as a means to detect early deterioration in physiological parameters in children, allowing intervention, and prevention of the development of critical illness. This study sought to assess the ability of the PEWS to detect clinical deterioration in our local unit.

Objective: To examine the introduction of the PEWS system into Ladybird Ward (0-18 month olds) in CUH and assess the early detection of physiological deterioration, clinical interventions and outcomes.

Methods: The medical records of every patient admitted to the Ladybird Ward of CUH from November 1st 2014- December 31st 2014 were retrospectively reviewed. Every patient's total PEWS was calculated. Children with a PEWS of 0-2 did not require further data collection. Children with a PEWS ≥ 3 had their diagnosis, breakdown of abnormal physiological parameters, time and grade of doctor at review, intervention and outcome recorded.

Results: A total of 250 patients were included in this analysis. 92% of patients recorded a PEWS of 0-2. 20/250 (8%) had a PEWS score ≥3, of whom 70% had a respiratory diagnosis, the most common being bronchiolitis. All patients with a PEWS ≥ 3 had tachycardia, while 75% had tachypneoa. 40% of patients with a PEWS ≥ 3 required intervention/change to their plan of care, while 60% required no change. No patients suffered cardiac arrest. One patient required PICU transfer.

Conclusion: A PEWS system is a useful tool for recognising early clinical deterioration in a child and initiating an appropriate response before serious consequences can develop. 92% of children did not meet criteria for escalation of care using this protocol.

NECROTIZING VZV RETINOPATHY IN AN IMMUNE COMPETENT PAEDIATRIC PATIENT: RETINAL DETACHMENT AND UNILATERAL VISUAL LOSS

M Murphy[1], D Townley[2], E Moylett[1]
[1]Academic department of Pediatrics, National University of Ireland, Galway, Ireland
[2]Opthalmology Department, University Hospital Galway, Galway, Ireland

Aims

We describe a case of Varicella Zoster virus retinitis resulting in unilateral visual loss in a previously well 14 year old boy.

Case/Method

Following approximately 6 weeks of primary care attendance, a 14 year old Bulgarian boy presented to the Emergency Department with a history of a painless red eye with worsening visual acuity. Ophthalmological examination revealed extensive retinal necrosis with 75% exudative retinal detachment of the left eye; right eye examination entirely normal. Past medical history and family history were non contributory; immunizations were current. A work-up for systemic eye disease, including sarcoidosis and TB, was performed. In addition a work-up of underlying immune function was performed including blood count with film, neutrophil function, lymphocyte phenotype, screen of humoral immune function, and screen of classical and alternate complement pathways. Possible secondary immune dysfunction was also assessed.

Results

A diagnosis of VZV retinitis was reached based on the classical appearance at vitrectomy coupled with isolation of VZV DNA from vitreous sampling; vitreal HSV, HIV, CMV and EBV PCR were negative. Immune evaluation and systemic disease evaluation were normal/negative. Apart from the ophthalmological findings the remainder of the physical examination was non focal. Acyclovir was immediately commenced and continued systemically for two weeks; oral valacyclovir for a total of 3-6 months. Left ocular visual acuity remains poor despite timely treatment with acyclovir, with awareness of hand movements only. Close follow up continues.

Conclusion

VZV retinitis among immune competent individuals is extremely rare, even more so in children. Consideration of reactivation of VZV is important when addressing the painless red eye. Prompt suspicion and treatment is vital, though treatment duration remains unclear.

COMPLEX HENOCH-SCHONLEIN PURPURA – A CHANGING TIME? A CASE SERIES AND REVIEW OF THE LITERATURE.

M Murphy[1], E Ryan[1]
[1]Academic department of Pediatrics, National University of Ireland, Galway.

Aims

We discuss four cases of complicated Henoch-Schonlein Purpura (HSP) with progressive symptoms and protracted hospital stays seen over a 4-month period.

Methods

Four school-aged children presenting with features consistent with typical HSP on initial review subsequently developed skin involvement, intractable pain and gastrointestinal or renal involvement.

Results

All children had protracted hospital courses and one patient was transferred to a tertiary centre for ongoing management.
All cases showed severe skin involvement, with the rash extending beyond the typical distribution in that of HSP. Blistering haemorrhagic skin bullae were evident in three of the four cases.
Gastrointestinal tract symptoms were prominent in 3 cases with evidence of clinical intussusception and fresh blood passed per-rectum. Radiographic evidence of intussusception was seen on one abdominal ultra-sound which was managed conservatively. Two children had severe blood loss per-rectum, full blood count showing a falling haemoglobin of >2.5g/dl.
Pain and arthralgia were also significant, and all children received opioids for pain management in addition to simple analgesia.
Only one case developed renal involvement. All children received steroids, with two patients receiving pulse steroids due to symptoms unresponsive to conventional therapy.

Conclusions

This case series highlighted a range of complications associated with HSP, a common systemic vasculitis of childhood. Haemorrhagic bullae are rare in pediatric HSP[i] but they were present in 3 of our 4 cases. The presence of bullae is an indication for commencing steroids, as it is felt to reduce their severity[ii].
<hr align="left" size="1" width="33%" />

[i] Saulsbury FT. Henoch-Schonlein purpura in children. Report of 100 patients and review of the literature. Medicine. 1999;78:395-409. [ii] Den Boer SL, Pasmans SG, Wuffraat NM, et al. Bullous lesions in Henoch-Schonlein purpura as indication to start systemic prednisolone. Acta Paediatr 2010;99:781-3.

AUDIT OF THE ASSESSMENT AND INITIAL MANAGEMENT OF FEVERISH ILLNESS IN CHILDREN UNDER FIVE YEARS BY THE PAEDIATRIC SPECIALIST

CA Murphy, A Khan
[1]Department of Paediatrics, Letterkenny General Hospital, Donegal, Ireland

Aims: Feverish illness in young children accounts for 20% of paediatric presentations to hospital. It is important to identify children with serious illness who require urgent treatment. Our aim was to assess whether the NICE guideline[1] was followed and to identify how our practice could be improved.

Method: A retrospective review of the medical notes of 30 children (<5 years) who presented to the paediatric ward in February 2015 with a documented temperature >38C was performed. The data was collected, input into Mircosoft Excel and descriptive statistics were performed.

Results: The age of the children ranged from 2 months to 5 years. All vital signs were recorded in 36% (n=11). Using the traffic light system, 5 children were assessed as high risk, 16 as intermediate risk and 9 were deemed at low risk of serious illness. In the high risk group 5(100%) had FBC and CRP, 4 (80%) had blood cultures and 4 (80%) had urine tested for infection. 3 (60%) received intravenous antibiotics. Children at low risk of serious infection should be assessed for signs of pneumonia and have their urine tested for infection; they do not routinely require blood investigations. However in this group (n=9) 88% had FBC and CRP, 66% had blood cultures, 78% had urine tested for infection.

Conclusions: Overall there was good documentation of the initial vital signs but there is room for improvement. A small proportion of the high risk group did not receive all of the recommended investigations and in the low risk group the blood sampling was often not in accordance with the guidelines. These findings were presented to the department and it was decided that all incoming doctors would receive a copy of Clinical Guideline 160 in their induction pack and that the “Traffic Light Table” should be clearly displayed in all clinical assessment areas.

1. “Feverish Illness in Children - Assessment and initial management in children younger than five years” Issued May 2013. NICE Clinical Guideline 160

BILIARY TRACT RHABDOMYOSARCOMA (BRMS) MASQUERADING AS A CHOLEDOCHAL CYST (CDC): A CASE STUDY

Shannon Murphy Crook, MD; William O'Connor, MD
Department of Pathology, University of Kentucky, Lexington, Kentucky

Introduction: Rhabdomyosarcoma (RMSA) is rare, accounting for less than 5% of all childhood malignancies. Nevertheless, RMSA is the most common soft tissue sarcoma of childhood, with over two-thirds diagnosed before six years of age. Most often presenting as a mass in the head and neck or genitourinary tract, RMSA is known to arise in the biliary tree. However, the tumor is often misdiagnosed as a choledochal cyst (congenital cystic dilation within the biliary tree) at this site. The incidence of CDC is 1 in 100,000-150,000 individuals. Symptoms of both entities include pruritis, abdominal pain, jaundice, or a palpable mass. Importantly, the distinction between BRMS and CDC by radiology cannot be made without evidence of metastasis. We present a 2 year old male with initial diagnosis of CDC who later was confirmed by pathology to have embryonal rhabdomyosarcoma of the biliary tract.

Case Study: A previously healthy 2-year-old African American male presented with a two week history of diffuse pruritis without a visible rash. Outpatient treatment with amoxicillin, nystatin, permethrin, hydroxyzine, and prednisone provided no relief. The mother brought the child to the emergency department for persistent pruritis where basic labs were drawn. A metabolic panel revealed mildly elevated AST, ALT, alkaline phosphatase, total bilirubin, and direct bilirubin levels. Abdominal ultrasound showed dilation of the extra- and intrahepatic ductal system. MRCP confirmed the presence of marked dilation of the common bile duct, cystic duct, left hepatic common duct, and gallbladder. A clinical diagnosis of a type IV choledochal cyst was made, and an elective hepatic left lobectomy with a Roux-En-Y hepatojejunostomy was performed to remove the cyst.

Gross examination revealed a cystic structure within the cystic duct filled with yellow to red polypoid excrescences. Microscopically, immature neoplastic cells formed compact, myxoid, and loose cellular patterns. Immunohistochemical stains were positive for myogenin and desmin, indicating skeletal muscle differentiation. A final diagnosis of embryonal rhabdomyosarcoma, botryoid variant, with extensive common bile duct and left hepatic duct involvement was rendered. There was no evidence of distant metastasis.

Discussion: Botryoid variant (sarcoma botryoides) is a unique subtype of embryonal RMSA that forms grape-like polypoid masses within hollow organs, mostly presenting in the bladder or vagina of infants. While rare, biliary tract RMSA in children is a prognostically more favorable site of origin, with event free survival of 70-85%. However, if distant metastasis is present, the event free survival drops to less than 30%. Our clinicopathologic findings highlight the importance of early diagnosis of true choledochal cyst versus the malignant differential of RMSA.

PROPIONIC ACIDAEMIA (PA) : AN ATYPICAL LATE PRESENTATION.

SM Mustafa[1], P Ihidero[1], L Ihidero[1], PE Fitzsimons[2], BA Linane[1], E O'Mahony[3]
[1]Depatment of Paediatrics, University Hospital Limerick, Limerick
[2]Department of Paediatric Laboratory Medicine, Temple Street Children's University Hospital, Dublin
[3]Graduate Entry Medical School, University Of Limerick, Limerick

AIM:

To report a case Of PA, it's clinical presentation, physical examination, investigations and management.

METHOD:

Clinical Data, Laboratory and radiological records of our case were reviewed.

RESULTS:

A 16 month Old boy Presented to the paediatric emergency department (ED) following a minor fall. There was no loss of consciousness or focal neurological deficit. Following assessment and observation by the surgical team, he was discharged home the same day. He represented two days later with an afebrile seizure. Of note there was no significant medical history, and no family history of seizures or metabolic disorders. His examination revealed no abnormalities apart from increased OFC (above the 98th centile). As part of evaluation for seizures routine blood investigations, ECG, EEG, CXR , CT brain And metabolic screening were performed. His routine investigations and imaging revealed no abnormalities. However, Metabolic screening revealed a small but increased excretion of propionic acid metabolites in urine, elevated plasma glycine, valine, isoleucine, proline and alanine. His acylcarnitine profile showed elevated propionyl carnitine. These findings were suggestive of a diagnosis of propionic acidaemia.He was referred to the National Centre for inherited Metabolic Disorders, Temple Street Hospital.
He was initiated on a lower protein diet, L-carnitine to avoid it's depletion and help excretion of propionic acid metabolites, given intermittent metronidazole course to limit propionate production from normal gut bacteria and started on trial of biotin. He has an emergency regimen to prevent a metabolic crisis.

CONCLUSION:

PA is an autosomal recessive disorder caused by a deficiency of propionyl Co A carboxylase, a biotin dependent enzyme in the catabolic pathway of amino acids (isoleucine, valine, threonine, and methionine), odd-chain fatty acids, thymidine, uracil and cholesterol.
Patients typically present in the neonatal period with signs of organic acidemia (e.g poor feeding, vomiting, floppiness, hypotonia, lethargy and coma). Rarely, it may present in older infants as lethargy, vomiting, failure to thrive, seizure or severe metabolic acidosis, hyperammonemia and ketosis.
This case highlights the broadning clinical spectrum for presentation of organic acidemias.

KLIPPEL-TRENAUNAY SYNDROME (KTS) : ANOTHER FACE TO PORT WINE STAIN

SM Mustafa[1], M Aftab[1], AM Murphy[1], A Caroll[1]
[1]Department of Paediatrics, University Hospital Limerick, Limerick, Ireland

AIM:
To Report a Case of KTS, it's presentation, physical Findings, Investigations, and Management.

METHOD:
Clinical data, laboratory and radiological records of our Index case were reviewed.

RESULTS:
A baby boy Born By NVD at Term To Non-Consanguinous parents noted to Have Extensive PORT WINE Stain On Legs ,Trunk & Back at birth. Referred to OLCHC. At 15 months of age , He gradually developed Marked Hemi Hypertrophy of Right Arm , Right Foot , & Mild Hypertrophy of Left foot, which subsequently reversed. Other signs: Bilateral Macrodactyly, Pale Macular Lesions on the back , trunk and Both Legs, & Abdominal fullness. Scoliosis was Not Noted.
Blood investigations & U/S abdomen were normal.
- An Initial Differential was :
a.*Proteus Syndrome* (Out ruled on the basis that Macrocephaly , Scoliosis and Epidermal Naevus were not noted)
b.*Klippel- Trenaunay Weber Syndrome*
Over the Following 3 years he developed : haemorrhoids, rectal prolapse, leg length discrepancy, and scrotal cellulitis.
Annual Follow up is carried out for all the above in Paediatric , Surgical, Orthopaedic and Urology Outpatient Clinics.

CONCLUSION:
Klippel-Trenaunay Syndrome: A Rare Disorder (1 in 20,000-40,000) of unkown Aetiology , named after the 2 French doctors who described it first in 1900. It is a triad of:Cutaneous Capillary, Venous Malformation& Hyperplasia of Soft Tissue and Bone. Called KT Weber Syndrome (when Associated with Arteriovenous anastomoses in a Limb),F:M1:1,The Vascular Malformation is usually limited to a Single extremity , it may present as: haemangiomas, arteriovenous malformation, port wine stain (commonly) , lymphangiomas or Lymphoedema. Boney overgrowth of the affected Limb results in increased Leg Lengthening until epiphyseal Fusion.

Diagnosis of KTS is based upon Clinical Suspicion and Radiological Investigations. MRI and MRV are helpful in evaluating the extent of malformations and hypertrophy.
Management is usually Supportive i.e Compression bandages for varicosities, orthotic devices, physiotherapy, and Surgical Correction in selected patients

OH MYIASIS! – A TROPICAL UMBILICAL CORD INFECTION

Siobhán Neville, Peter J O'Reilly, Department of Paediatrics and Neonatolgy, St Walburg's Hospital, Nyangao, Lindi Region, Tanzania

A seven-day-old female infant presented to hospital in the rural region of Lindi, Southern Tanzania, as her mother had noticed a foul smell coming from the umbilicus following separation of the cord. The baby had been born at the same facility by spontaneous vaginal delivery, with no ante- or postnatal complications. The mother denied applying any topical preparations to the umbilicus after discharge, and reported that the baby had been breastfeeding well at home. On examination, the child was perfused and active, with mild icterus. She had a low-grade pyrexia of 37.6°C; her other vital signs were within normal range. Examination of the umbilicus revealed a short, malodourous stump, with worm-like movement visible within. There was no surrounding cellulitis, abdominal mass or organomegaly.

The infant was commenced on empiric antibiotic treatment, and the umbilicus was cleaned with gentian violet. A forceps was used to extract five live larvae from the stump under direct visualisation. These worm-like organisms were white in colour, and measured 3-5mm in length. Once all visible larvae were removed, the umbilicus was occluded with petroleum jelly, to force any remaining organisms to the surface. The patient remained clinically well, but had further pyrexia two days later. She was discharged home well after a ten-day course of empiric antibiotic treatment and three days of phototherapy.

Myiasis is an infestation of live mammalian tissue by the larvae of dipteran flies[1]. While umbilical cord myiasis is common in animals, it is rarely seen in human neonates. Cases occur almost exclusively in tropical areas[2]. Treatment involves extraction of the larvae, with treatment of local or systemic infection, if present[1,3]. Comprehensive management should include imaging to rule out invasive myiasis, as well as entymological review of the extracted larvae[2,4]; however, this is not always possible in the low resource setting.

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RETROSPECTIVE STUDY OF ANTIBIOTIC USE IN NEONATES WITH RESPIRATORY DISTRESS POST ELECTIVE CAESAREAN SECTION WITH INTACT MEMBRANES (ECSWIM)

Fionnghaile Nixon[1], Daragh Finn[2], C. Anthony Ryan[3.]

Purpose:

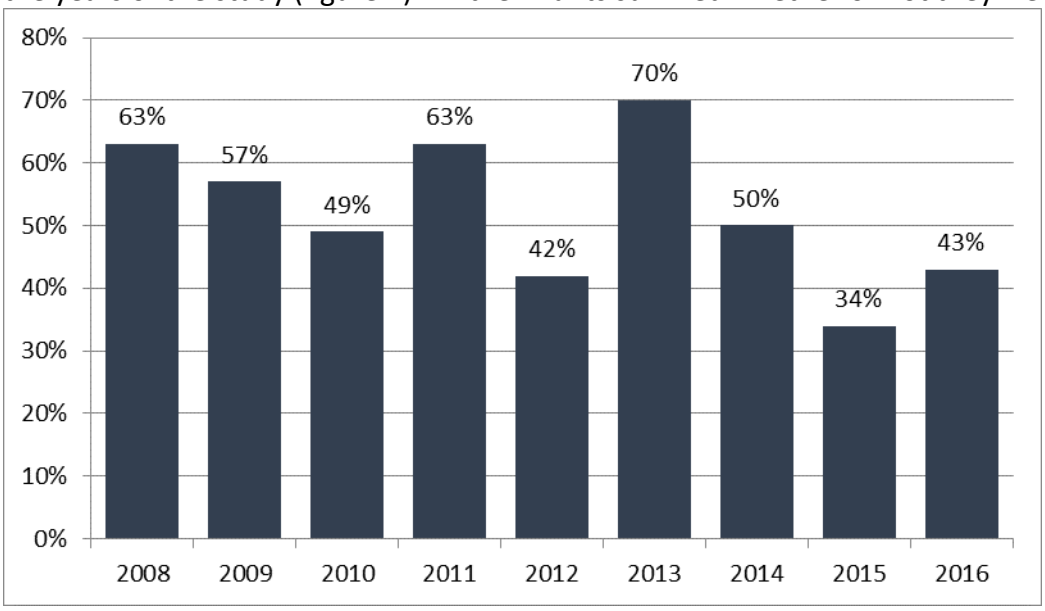
Greater biome research has increased the knowledge of immediate and longer-term effects of antibiotics on the neonatal microbiome, hence we hypothesized that antibiotic prescribing in newborns at low risk of sepsis might be changing. The purpose of this study was to explore antibiotic prescribing practices in newborns with respiratory distress post ECSWIM.

Method:

Admissions books were searched alongside the electronic Badger database, for infants admitted to NICU with respiratory distress post ECSWIM from 2008 to 2016. Charts were reviewed to determine which infants received a sepsis screen and antibiotic treatment.

Results:

From August 2008 to August 2016. 467 babies (66% male) met the inclusion criteria. Half (52%) of the infants were given antibiotics. The percentage of infants receiving antibiotics remained unchanged over the years of the study (figure 1). All the infants survived whether or not they were treated with antibiotics.



Conclusion:

Antibiotic use in this extremely low risk group of infants has remained unchanged over the years. We postulate that this may be because there have been no advances in early sepsis prediction or identification.

AN AUDIT OF THE CLINICAL OUTCOMES AND COMPLICATIONS OF CHILDREN WITH PRIMARY VARICELLA ZOSTER VIRUS (VZV) INFECTION IN THE ED

B. Noonan[1], C. Thompson[2], I. Okafor[2], N. Kandamany[2], R. Drew[2,3] and R. McNamara[2].
1 Graduate Entry Medical School (GEMS), University of Limerick, Limerick
2 Temple Street Children's University Hospital (TSCUH), Dublin
3 The Rotunda Hospital, Dublin

Background
Varicella zoster virus (VZV) infection is a common condition worldwide. While the vast majority of patients experience fever, malaise and characteristic rash; significant complications can occur in roughly 1% of cases. Further evidence is needed to evaluate the disease burden of VZV on the Irish paediatric population in order to inform the debate on national VZV vaccination.

Aims & Methods
This study aimed to investigate the demographic and clinical features of children presenting with primary VZV infection to the ED department as well as the rates of complications. A retrospective chart-based audit was conducted on presentations to the ED over a two year period. ED attendance cards were searched for final diagnosis of "chickenpox" or "pox" and a list of eligible patients identified. ED records were hand search for demographic, clinical and treatment information.
Results
599 presentations with chickenpox were identified from June 2014 to June 2016. The first 100 presentations were selected which corresponded to January to June 2016. Of this sample, 73 (73%) patients were discharged from the ED, 16 (16%) were referred to other hospital departments and 11 (11%) patients were admitted. The most common complication was bacterial superinfection ranging from cellulitis to osteomyelitis. Respiratory and ophthalmological complications were also seen. Of the 11 admitted patients, the average duration of admission was 5.6 days with a standard deviation of 2.9 days. 17 (17%) patients were discharged with treatment from the ED department including oral antibiotics and oral aciclovir. 8 of these patients (47%) were treated with topical aciclovir for eye lesions.

Conclusions
This study adds a detailed description of the burden of VZV infection on an Irish paediatric population and opens further avenues for research into national burden of VZV in Ireland.

Key words: varicella zoster, chickenpox, emergency department, complications.

COMPLICATIONS ASSOCIATED WITH CENTRAL VENOUS ACCESS DEVICES IN CHILDREN WITH SEVERE HAEMOPHILIA: A 12 YEAR REVIEW

N O' Brien[1], B Antao[2], B Nolan[1]
[1]Haematology Department, Our Lady's Children's Hospital, Crumlin, Dublin 12, Ireland
[2]Surgical Department, Our Lady's Children's Hospital, Crumlin, Dublin 12, Ireland

Aims:
In Irish children with severe haemophilia, central venous access devices (CVADs) are used to facilitate intravenous administration of prophylactic factor. Our aim was to investigate the incidence and risk factors for CVAD associated complications in these children.

Methods:
We retrospectively reviewed the health care records of children with severe haemophilia, attending Our Lady's Children's Hospital Crumlin, who had a CVAD inserted between January 2004 and February 2016.

Results:
54 CVADs were inserted into 35 patients. CVADs were inserted at a median age of 692.5 days (range: 9-3469). The median age of transition to peripheral veins was 2615 days (range: 1437-4429). The median duration of CVAD placement was 1590 days (range: 11-3410).
Infectious complications occurred in 20/54 CVADs (37%). 12/20 (60%) infections occurred in CVAD patients without inhibitors, and 8/20 (40%) in CVAD patients with inhibitors. Infectious complications were more prevalent in CVADs with inhibitors (n=8/17; 47%) versus CVADs without inhibitors (n=12/37; 32.4%). Median time to first infection was 474 days (range: 3-2278).
15 non-infectious complications occurred in 12/54 CVADs (22.2%). These included thrombus (n=4/15; 26.7%), migration (n=4/15; 26.7%), hardware failure with leakage (n=2/15; 13.3%) and local erosion (n=2/15; 13.3%).

39/54 CVADs have been removed. 16/39 CVADs (41%) were electively removed to facilitate transition to peripheral venous access. Infection was the commonest complication necessitating CVAD removal (n=12/39; 30.8%) Other complications leading to CVAD removal were mechanical (n=4/39; 10.2%), thrombosis (n=3/39; 7.7%) and local erosion (n=2/39; 5.1%). 3/39 (7.7%) had residual tubing in situ post attempted CVAD removal.

Conclusions:
Infection is the commonest complication in our CVAD patients, and is also the commonest complication necessitating CVAD removal. CVAD patients with inhibitors are more likely to develop infection than those without inhibitors. Parents are trained earlier in peripheral venous access to allow earlier removal of a CVAD or to avoid CVAD insertion.

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CAH OR AHC? A DIAGNOSTIC ANAGRAM

E O Ceallaigh[1], N McGrath[1], PE Fitzsimons[2], I Knerr[3], D O Rourke[4], SA Lynch[1,6], NP Murphy[1,6]
[1]Paediatric Endocrinology, Children's University Hospital, Temple Street, Dublin 1, [2]Paediatric Laboratory Medicine, Children's University Hospital, Temple Street, Dublin 1, [3]National Centre for Inherited Metabolic Disease, Children's University Hospital, Temple Street, Dublin 1, [4]Paediatric Neurology, Children's University Hospital, Temple Street, Dublin 1, [5]Clinical Genetics, Children's University Hospital, Temple Street, Dublin 1, [6]School of Medicine, University College Dublin, Dublin

Introduction:
Xp21 contiguous gene deletion syndrome is a rare condition comprising of deletions in adjacent genes on chromosome Xp21 resulting in congenital adrenal hypoplasia (AHC), duchenne muscular dystrophy (DMD) and glycerol kinase deficiency (GKD). Adrenal insufficiency is often the presenting feature.

Case-Report:
A 13-day-old non dysmorphic male infant presented with poor feeding and significant (12%) weight loss. He was born at term, with birth weight 3.75 kg and had been discharged home on day 2 of life. This pregnancy was uneventful but his mother had 2 previous early miscarriages and 1 intrauterine death at 23 weeks secondary to renal agenesis. There was no history of consanguinity. Physical examination revealed a thin, dehydrated infant with mildly hyperpigmented genitalia. Plasma electrolytes showed Na^+ 124mmol/, K^+ 5.9mmol/L, pH 7.29, $HC0_3^-$ 18 mmol/L consistent with congenital adrenal hyperplasia (CAH). He was managed with iv hydrocortisone and 0.9% saline with normalisation of his electrolytes but 17OHP level was 7 nmol/L and cortisol 250 nmol/L making salt wasting CAH unlikely. Primary adrenal failure was confirmed with elevated ACTH level 362 ng/L (7-63) and plasma renin >25 ng/ml/hour (6-8). Urine steroid profile was consistent with congenital adrenal hypoplasia (AHC). An extended metabolic work-up showed CK level of 5000U/L (20-155) and elevated urinary glycerol levels suggesting glycerol kinase deficiency. Xp21 contiguous gene deletion syndrome was confirmed with Xp21, 3p21.1(26,086,104-32,395,395) mutation. His mother was found to be a carrier. He was discharged home well on hydrocortisone, fludrocortisone and salt supplementation. At follow-up at age 11 weeks, he had appropriate weight gain and normal electrolytes.

Conclusion:
We present the Republic of Ireland's first reported case of this syndrome presenting with neonatal adrenal insufficiency. The disorder is very rare, a search on Decipher revealed only 4 other overlapping cases of a similar size deletion. The long-term neurological prognosis is poor.

PREVALENCE AND CHARACTERISTICS OF PAEDIATRIC TYPE 2 DIABETES IN THE REPUBLIC OF IRELAND

M O'Dea[1], S O'Connell[2], M O'Grady[1]
[1]Department of Paediatrics, Midland Regional Hospital, Mullingar, Ireland
[2]Department of Paediatrics and Child Health, Cork University Hospital, Cork, Ireland

Aims
The aim of this study was to establish the prevalence of paediatric type 2 diabetes (T2DM) in the Republic of Ireland (ROI). In addition, we sought information regarding patient demographics, initial presentation, management, outcomes, co-morbidities and complications.

Methods
We conducted a cross-sectional survey of children less than 16 years with a diagnosis of T2DM. A standardised proforma was circulated to each of the 19 centres in the ROI responsible for the care of children with diabetes between October and December 2015.

Results
Responses were obtained from all 19 paediatric centres. Twelve cases of T2DM were identified, giving a prevalence in children aged 0-15 of 1.2/100 000. The median age at diagnosis was 12.5 years. Six (50%) patients were of Irish ethnicity, 2 (33%) of whom were members of the Travelling Community. Four (33%) were of African ethnicity. The prevalence of T2DM in traveller children was 15.6/100,000 (OR 33.5, 95% CI [6.1 to 182] p=0.0001) and was similar to that of African children, a known high-risk group at 14.7/100,000 (OR 31.6, 95% CI [7.9 to 126] p<0.0001).The median HbA1c at diagnosis was 7.8% (62 mmol/mol) and the current median HbA1c was 6.8% (51 mmol/mol). Seven (59%) patients are managed on metformin monotherapy, three (25%) of patients are managed on insulin and metformin combination and 2(16%) on dietary management. No patient had evidence of microvascular complications.

Conclusion
This is the first national study to estimate the prevalence of childhood T2DM in Ireland. Children from a travelling background appear at particularly high risk.

PERSISTENTLY LIMPING CHILD.. THINK OUTSIDE THE BOX!

ON OKETAH, F CONDON, M MAHONY
University Hospital Dooradoyle, Limerick

INTRODUCTION

Discitis - intervertebral disk infection is uncommon in children and can present in different ways at different ages. It may present with refusal to crawl or walk; limp or back pain, lumbar lordosis or a combination of one or more of these symptoms. It can be quite difficult to diagnose in a toddler who is uncommunicative. We present a case of a delayed diagnosis of discitis in a toddler.

CASE PRESENTATION

A 2 year old girl was referred to the emergency department for the second time in 10 days with a 3 week history of left hip pain and limp without a fever. She had a history of preceding viral URTI 2 weeks prior to her symptoms. The child's mother thought the problem was the child's 'back'. On initial examination, she was noted to be well but limping/ very uncomfortable walking and had a full range of movement of both hips. Initial impression was transient synovitis. Inflammatory markers increased over 48hours with no symptom improvement on conservative management. MRI spine done on day 6 of admission showed an L5-S1 discitis osteomyelitis involving the sacral ala with small epidural abscess formation. She was subsequently treated on and responded to a prolonged course of intravenous antibiotics.

CONCLUSION

Discitis is a difficult diagnosis to make in young children who are unable to describe their symptoms. It is important to listen to parental concerns on their own observations. As most cases of transient synovitis occur in children 3-10 years and typically resolve by 7-10 days, it is important to consider other diagnosis in a younger child with persistent symptoms to avoid unnecessary delay in treatment.

A RARE CAUSE OF INTESTINAL OBSTRUCTION

ON OKETAH[1], D DEACY[2], F TAREEN[2], S GALLAGHER[1]
1 University Hospital Dooradoyle, Limerick
2 Temple Street Children's University Hospital, Dublin

INTRODUCTION

Meckel's diverticulum is an omphalo-mesenteric duct remnant on the antimesenteric border of the distal ileum with a prevalence of 1.5-2%. It is thought to be the most common congenital malformation of the gastrointestinal tract. Many cases are asymptomatic but complications can occur such as haemorrhage, diverticulitis, chronic ulceration and intestinal obstruction.

We present a case of a meckel's diverticulum occurring concurrently with a terminal ileum volvulus diagnosed intra-operatively both congenital anomalies rarely found together.

CASE REPORT

A 13 month old boy presented acutely unwell with a 36 hour history of vomiting initially clear but subsequently billous with no fever or diarrhoea. On examination, the child was dehydrated with a diffusely tender abdomen. After initial fluid resuscitation, nasogastric tube and antibiotics, he was transferred urgently for surgical opinion. An examination under anaesthesia revealed a large palpable mass in the upper abdomen.

An exploratory laparotomy showed a meckel's band causing an ileal volvulus and 20cm of necrotic bowel was resected. He made an excellent recovery and was discharged day 4 post-OP on full feeds.

CONCLUSION

A meckel's diverticulum and volvulus can occur simultaneously although very rare. In the management of acutely unwell children, immediate resuscitation and supportive measures should remain the first priority until the underlying diagnosis is identified.

AUDIT OF NEONATAL ATTENDANCES AT RBHSC ED FOLLOWING DISCHARGE

TK Oman, D Sweet
[1]Royal Victoria Hospital Neonatal Intensive Care Unit, Belfast, UK
[2]Royal Victoria Hospital Neonatal Intensive Care Unit, Belfast, UK

Neonates discharged from the RVH NICU unit receive careful discharge planning which includes parent craft and early baby clinic follow up. At discharge the aim is that there should be no need for medical intervention prior to clinic review. But how many of those cared for attend the RBHSC Emergency Department (ED) prior to review?

This audit aimed to identify how many of the neonates discharged from NICU attend the local ED following discharge and for what reason.

All babies discharged from NICU in a 6 month period were identified using Badgernet and cross referenced with the Symphony ED system for all who attended within 6 months of life and for what reason. We then cross referenced the scaled list with PAS booking system to identify when the baby clinics were.
259 neonates were identified. 22% were seen in ED under 6 months of age. 55% of these had baby clinic appointments. 33% of those who had an appointment were seen prior to this. Main reasons for attending included reflux, bronchiolitis, URTI, sepsis etc. Only 3 attended with issues that could have been dealt with in the baby clinic. Of those without clinic appointment (26) only 6 had issues that would be dealt with in clinic, 5 of which were looked after by another team.

As it stands the baby clinic is providing an effective service to those discharged from NICU. The problem is that ED see 368 neonates in 6 months, only 58 discharged from NICU attended. Most where not known to the neonatal team. The majority of these where discharged home (200) and were not best served attending an ED. Many were related to advice and support. These neonates need access to better community services, neonatal clinics or GP. Where should they go?

AUDIT OF DONOR EXPOSURE IN CRAIGAVON AREA HOSPITAL

TK Oman, M Hogan
[1]Paediatrics, Southern Health and Social Care Trust, Craigavon, UK
[2]Paediatrics, Southern Health and Social Care Trust, Craigavon, UK

Premature infants often require transfusion of packed red cells (PRC). Severe IUGR and prematurity are risk factors for multiple PRC transfusions. This exposes the neonate to the risk of multiple donors. The PediPack system allows for the allocation of blood from a single donor.
Using the national transfusion guidelines as the standard we audited all neonates in a CAH who received transfusions and their donor exposure. In addition we audited the number of Group and Holds requested (GH).

We identified all neonates under 1500g admitted to CAH NICU in 2013-2014 using Badgernet. We obtained the GH results for each neonate and identified if they had received any transfusion and from how many donors. We also identified the timing and number of GH samples.

71 neonates were identified. Most received only 1 transfusion (45%). The rest ranged from 2-5 transfusions. Those under 1000g were more likely to be transfused. Transfusions on the same day generally were from the same donor. Those on different days had different donors. The days between donors varied widely. Most neonates only had 2 GH as per protocol, the rest had 1-5.

The number of neonates receiving transfusions were small. Most only had one transfusion. Those who received transfusions on the same day received them from the same donor due to lab protocol. Many of the multiple transfusions were days apart (1-35 days). Clear communication with the lab would have resulted in fewer donor exposures to a small number. Many of the patients required multiple GH to be sent, the lab stated this was for patient identification only.

Clear communication from NICU regarding the possibility of multiple transfusions would reduce donor exposure. Under four months only 2 GH samples are needed, anymore is an unnecessary risk.
National Comparative Audit of the use of Red Cells on Neonates and Children 2010 Transfusion guidelines for neonates and older children, BJH, 2004, 124, 433-453 Neonatal Transfusion, BCSH 2007 - www.bcshguidelines.com Red Cell Transfusion in Newborn, Nottingham Neonatal Service - Clinical Guidelines 2014 Neonatal Handbook, Royal Jubilee Maternity Hospital

ROLE OF A PAEDIATRIC INFECTIOUS DISEASE SERVICE IN AN IRISH TERTIARY PAEDIATRIC CENTRE.

J Maguire[1], C O Maoldomhnaigh[1], R Leahy[1], P Gavin[1], K Butler[1]
[1]Paediatric Infectious Disease and Immunology Department, Our Lady's Children's Hospital, Crumlin, Dublin12, Ireland

Background:
The Paediatric Infectious Disease (PID) service in Our Lady's Children's Hospital Crumlin (OLCHC) functions primarily as an outpatient and consult service, receiving telephone queries from all paediatric departments in the Republic of Ireland and internal consults from the general medical, surgical and tertiary specialist teams within OLCHC. In order to inform our clinical practice we sought to analyse the internal consult requests received over a 6 month period.

Methods:
All consults are recorded on information cards on which relevant clinical information and investigations are documented. Following sign off the information on these cards is entered on to an electronic database. This database and the consult cards were accessed to obtain information on patient demographics, diagnosis and consult queries in the 6 month period from January to June 2015.

Results:
In the study period 358 consults (circa 60/month) were identified with a median age of 3.9 years (1day- 17 years). The median length of co-management by the PID team was 5 days (range, 1-33days). Incomplete data was recorded in 42 patients. Children with malignancies accounted for 52 (16%) of consults with the most common issue being persistent febrile neutropaenia (35, 67%). Forty-eight (15%) children had congenital heart disease, a further 27 had other non-cardiac congenital abnormalities. Forty-four (14%) children had osteoarticular infections. 274 of 316 (87%) consults related to questions regarding antibiotic treatment. 46 (15%) consults were for investigation of pyrexia of unknown origin. Central line infections were present in 44 (14%) patients. Twenty-eight (9%) children were in the paediatric intensive care unit when consulted.

Conclusions:
This study highlights the wide variety of subspecialties utilising the PID service and the integral role the service plays within a tertiary paediatric hospital. The greatest number of requests were from haematology-oncology, cardiology and orthopaedic services.

INFLAMMASOME ACTIVATION IN PRETERM INFANTS

M Omer[1, 2], L Kelly[1, 3], E J Molloy[1,2,4]
[1]Discipline of Paediatrics Trinity College, the University of Dublin; Department of Neonatology, Dublin; Departments of [2]Neonatology and [3]Pathology, Coombe Women's and Infant's University Hospital, Dublin 8 & [4] Tallaght Hospital, Dublin 24, Ireland.

Aims:
Preterm infants are prone to multiorgan complications many of which are mediated by persistent inflammation. The NLRP3 inflammasome is a caspase -1 activating complex that plays a major role in innate immune responses and we aimed to examine its role in preterm inflammation.
Methods:
Whole blood was sampled from Preterm infants < 29 weeks gestation, term infants' cord blood with or without LPS exposure. mRNA was extracted and components of the inflammasome (NLRP3 and ASC) and IL1β gene expressions were assessed using TaqMan® Real time PCR.
Results:
Average gene expression in preterm infants showed no differences in ASC and NLRP3 but a significant down regulation of IL1β ($p < 0.001$) compared to term infants. LPS significantly increased IL1β and NLRP3 gene expression ($p=0.01$, 0.02 respectively) but not ASC gene expression in term infants. In preterm infants IL1β, NLRP3 and ASC gene expressions were not significantly increased following LPS incubation.
Conclusions:
IL1β gene expression is down regulated in preterm infants while measured components of the inflammasome are otherwise intact. LPS-up regulation of the inflammasome did not occur in preterm infants although this was intact in term infants. This may mediate early susceptibility to infection in preterm infants.

THE ASSOCIATION BETWEEN SERUM VITAMIN D STATUS AND DISEASE ACTIVITY IN PAEDIATRIC INFLAMMATORY BOWEL DISEASE

E O'Neill[1], T Raftery[2], A Carey[2], S Kiernan[2], K O'Driscoll[2], M Hamzawi[2], S Quinn[2], AM Broderick[2], B Bourke[2], S Hussey[2]
[1]UCD School of Medicine and Medical Science, University College Dublin, Dublin, Ireland
[2]Department of Gastroenterology, Our Lady's Children's Hospital Crumlin, Dublin, Ireland

Aims: The role of vitamin D has been investigated in numerous inflammatory conditions including inflammatory bowel disease (IBD). Paediatric and adult studies show vitamin D status associates with disease initiation, progression and severity. This had yet to be investigated in an Irish paediatric cohort. Aims were 1) to determine the vitamin D status at diagnosis of paediatric IBD patients referred to the National Centre for Paediatric Gastroenterology, 2) to describe differences in vitamin D status observed between children diagnosed with Crohn's disease (CD) and ulcerative colitis (UC), and 3) to investigate associations between vitamin D status and markers of systemic (C creative protein, CRP), and intestinal inflammation (faecal calprotectin, FC) and disease activity (Paedaitric Ulcerative Colitis Activity Index, PUCAI score/ Paedatric Crohn Disease Activity Index, PCDAI score).
Methods: Data was obtained from the Determinants and Outcomes in Children and Adolescents with IBD Study (DOCHAS). Classification of patients was based on diagnosis at recruitment. Vitamin D status was compared with PUCAI/ PCDAI, CRP status, and FC status. Serum 25(OH)D concentration was used to assess vitamin D status and deficiency was defined as serum 25(OH)D <50nmol/l.
Results: Three hundred and thirty-eight children were included. 25(OH)D was suboptimal in 80.7% of cases. Serum 25(OH)D inversely correlated with PCDAI (r = -0.490, p = <0.001), age (r = -0.367, p = <0.001) and CRP (r = -0.534, p = <0.001). ANOVA test showed no significance between 25(OH)D status and season, diagnosis, or living arrangement.
Conclusion: Vitamin D deficiency is common in paediatric IBD irrespective of diagnosis, season or living arrangement. Serum 25(OH)D inversely associates with systemic inflammation (CRP) and severity of disease in CD (PCDAI). Year-round supplementation of vitamin D should be considered. Investigation of the affect of vitamin D supplementation on disease activity in paediatric CD is advisable.

Table 1: Demographic data

n=338		**UC**	**CD**	**IBD-U**	**Atypical UC**	**Control**
No. of Diagnosis *n, (%)*		118 *(34.9)*	135 *(39.9)*	18 *(5.3)*	4 *(1.2)*	63 *(18.6)*
Gender *n, (%)*	Female	61 *(18.0)*	36 *(10.7)*	5 *(1.5)*	1 *(0.3)*	26 *(7.7)*
	Male	57 *(16.9)*	99 *(29.3)*	13 *(3.8)*	3 *(0.9)*	37 *(10.9)*
Mean age, years *(SD)*		11.9 *(3.4)*	11.8 *(3.5)*	12 *(2.6)*	10.2 *(4.2)*	9 *(4.5)*
Mean 25(OH)D (nmol/l) *(SD)*	*n=119**	35.6 *(18.5)*	33.4 *(20.5)*	33.9 *(12.9)*	54.5 *(23.3)*	54 *(32.3)*
Urban dwelling *n, (%)*		67 *(19.8)*	71 *(21.0)*	10 *(3.0)*	2 *(0.6)*	40 *(11.8)*
Rural- isolated dwelling *n, (%)*		38 *(11.2)*	45 *(13.3)*	8 *(2.4)*	1 *(0.3)*	14 *(4.1)*
Rural- farm dwelling n, *(%)*		7 *(2.1)*	5 *(1.5)*	0	0	8 *(2.4)*

*35.2% of total study cohort with 25(OH)D results available. The living arrangements of 316 patients are presented, as 22 patients had an unknown living arrangement.
UC: Ulcerative colitis, CD: Crohn disease, IBD-U: Inflammatory bowel disease undefined, 25(OH)D: Vitamin D status, n: number of patients, %: percentage of patients SD: standard deviation

LIFE THREATENING HAEMOPTYSIS WITH BILATERAL ASPERGILLOMAS IN A PATIENT WITH CYSTIC FIBROSIS.

M O'Rahelly[1], B Linnane[1]
[1]Paediatric Department, University Hospital Limerick, Limerick, Ireland

Aims:
We report a case of a 14year old boy (RF) suffering life threatening haemoptysis despite maximal medical therapy. Our patient has a background of advanced cystic fibrosis (CF) lung disease, chronic *Staphylococcus aureus*, bilateral aspergillomas, recurrent severe haemoptysis and a requirement for IV Antibiotics every 4-6weeks, the patient lives in an isolated location 1 hour from the nearest CF centre. Outlined is an overview of the timeline and management strategies implemented.

Methods:
RF had his first episode of haemoptysis in 2012 and was commenced on transexamic acid soon after. He has a long history of saccular bronchiectasis with subsequent development of bilateral aspergillomas. This was treated aggressively with IV Voriconazole and inhaled Amphotericin without resolution. He was not a candidate for bronchial artery embolisation and was then started on long term low dose atenolol[1].

Results:
In May 2016 he presented to the emergency department with large volume haemoptysis and hypotensive requiring IV transexamic acid and emergency blood transfusion. He was transferred to a paediatric ICU and underwent cardiac catheterisation with embolisation of an aberrant bronchial artery. Haemoptysis continued requiring another blood transfusion. Repeat embolisation attempt failed and a aortic occlusion stent was sited.

Conclusions:
One week later he had a further large bleed and was transferred to a Paediatric Lung transplant centre in the UK. Interventional Radiology embolised internal mammary arteries with subsequent improvement in haemoptysis. He has been listed for urgent lung transplant.
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BONE AGE ASSESSMENT IN GENERAL PAEDIATRIC PRACTICE

M O'Rahelly[1], N Bussmann[1], B Jamal[1], AM Murphy[1]
[1]Paediatric Department, University Hospital Limerick, Ireland

Introduction:
Bone age in children is evaluated by examining an X-ray of the left wrist. This is assessed and compared to the chronological age of the child for discrepancy. The Greulich and Pyle method was used throughout our reports. Bone age is used to determine whether growth is appropriate and can be used to monitor the therapeutic effect of growth hormone treatment.

Aims:
To review requests for assessment of bone age and appropriateness of orders in our Paediatric practice.

Methods:
A list of requests of left wrist X-rays over the twelve month period between the 1st of July 2013 and the 30th of June 2014 in children less than 16 years was obtained from the radiological database.
Excluded from our study were X-rays of the left wrist lacking a comment on bone age. A final number of 22 patients had a left wrist x-ray for which a bone age was calculated.
Information recorded included gender, indication for the order, inpatient or outpatient status, discrepancies between bone age and chronological age and whether subsequent imaging was performed.

Results:
Of the 22 bone age examinations, 13 were female, 9 male, 7 were performed as inpatients and 15 as outpatients. Indications were in order of frequency as follows: short stature (8), precocious puberty (5), Congenital Adrenal Hyperpalsia (2), premature menarche (2), and others (5).
Regarding results, there were 10 reports indicating delayed bone age, 10 indicating advanced bone age and 2 were concordant. Repeat images were performed in 9 cases.

Conclusion:
Bone age assessment is an uncommon radiological request in our Paediatric practice and when requested indications are in line with general recommendations.

MAGNIFYING LENSES (LOUPES) TO AID INSERTION OF UMBILICAL CATHETERS IN NEWBORN INFANTS

AM O'Riordan[1], O Kozdoba [1], JF Murphy[1], LK McCarthy [1]
[1]Department of Neonatology, The National Maternity Hospital, Holles St, Dublin 2, Ireland.

Background and aims

Umbilical catheters are used to administer fluids and medications; and to monitor blood pressure in sick and preterm newborns in the NICU. Correct catheter placement can be difficult as the vessels are small, fragile and gelatinous. We aimed to determine if wearing magnifying lenses (loupes) during catheter insertion increased the rate of successful insertion and decreased insertion time

Methods

Clinicians of varying experience were asked to insert a single lumen 5-Fr umbilical catheter into the umbilical artery of our cord model. They performed the procedure twice once wearing bifocal flip-up loupes and once without. Clinicians were randomly assigned to using loupes first or second by flipping a coin. For each attempt we recorded if the catheter was correctly placed and timed the procedure. Clinicians were asked to rate their experience. Nobody had prior experience using loupes.

Results

Loupes did not significantly increase the rate of successful insertion; reduce procedural time; or benefit consultants or junior staff (Table 1). With loupes 17/18 clinicians rated the ease of insertion as difficult or very difficult vs. 7/18 without. The most sited reason was difficulty with depth perception. Many reported that loupes helped to magnify the vessel opening but they felt dizzy, disorientated or nauseous during the procedure.

Conclusions

Magnifying loupes did not aid umbilical catheterization. Without prior loupe training clinicians of varying experience found that using loupes made the procedure more difficult.

"BEREAVEMENT COUNSELLING FOR HEALTHCARE WORKERS IN THE AFTERMATH OF CHILD DEATH"

DM O'Sullivan[1], E Corry[1], GR Stone[1], P Stewart[1], H Noonan[1], A Murphy[1]
[1]Paediatrics , University Hospital Limerick, Limerick, Ireland

Background: Employers have a duty of care under both common and statute law to ensure care for the health and safety of their workers. Thus there are moral and legal duties to consider the psychological needs of personnel following exposure to traumatic events related to the workplace. University Hospital Limerick has recently initiated a Paediatric bereavement counselling service for healthcare workers in the aftermath of child death.

Aims: To date there is a paucity of research regarding the effectiveness of debriefing and bereavement counselling for paediatric hospital staff after critical incidents. The aim of this study was to survey the healthcare workers who have been involved in paediatric death within the last year at UHL in order to assess the utilisation of the bereavement services and get personal feedback regarding the events.

Methods: This study is a qualitative and quantitative evaluation based on a structured questionnaire survey of paediatric consultants, NCHDs, nurses, play therapists, phlebotomists and social workers. Questions collected data about policy, events and individuals' personal experience of debrief and bereavement counselling. We collected data over a six month period in 2015/2016 focusing on child death within the framework of paediatric wards.

Results: Data collection is currently still underway. There were 7 child deaths in total, 2 were unexpected deaths on the paediatric ward overnight, 2 were expected deaths on the paediatric ward associated with prolonged suffering and 3 were expected home deaths that were facilitated by the hospice team but traumatic for the paediatric team who worked closely with these children.

Conclusion: Bereavement Counselling Services have been highlighted as having an important role not only for parents but also for healthcare workers in the setting of child death. Little is currently known about the debriefing of hospital staff after critical incidents such as failed resuscitation.

A SUSPECTED CASE OF CANDLE SYNDROME

O Petrea[1], E Clarke[1], OG Killeen[1]
[1]National Centre for Paediatric Rheumatology (NCPR), OLCHC, Dublin, Ireland

Background: Chronic atypical neutrophilic dermatosis with lipodystrophy and elevated temperature syndrome (CANDLE) is a rare auto-inflammatory disorder first described in 2010. Early onset of recurrent fever, purpuric skin lesions, violaceous eyelids and progressive lipodystrophy typically occur in the first year of life. Other symptoms including arthralgia, aseptic meningitis, conjunctivitis, nodular episcleritis, and bilateral basal ganglia calcifications have also previously been reported. Candle syndrome is due, in most cases to mutations in the proteasome subunit, beta type, 8 (PSMB8) gene, resulting in dysregulation of the IFN pathway.

Case presentation: We report a suspected case in a 5 year old girl who had presented at 6 weeks of age with an eczematous rash, macrocephaly and developmental delay. At 5 months of age she developed a diffuse painful nodular erythematous rash (panniculitis), with raised inflammatory markers. At 12 months she developed seizures, and a brain MRI noted prominence of the cortical sulci with ventricular dilatation. Her care was subsequently transferred to the NCPR thereafter in view of her history, recurrent fever, panniculitis, joint pain/swelling, significantly raised acute phase reactants and evolving lipodystrophy. Management and Outcome: Candle syndrome was suspected and genetic testing requested but remains outstanding. Interleukin 1RA (Anakinra) was commenced with an initial good response, although shortlived. Further immunosuppressive therapies were initiated including Methotrexate, Infliximab (Remicade), and anti IL6 (Tocilizumab) with only a moderate response, and an inability to successful withdraw corticosteoids. A trial of a JAK inhibitor (ruxolitinib) is to commence shortly in light of recent promising studies.

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FLOCK OF AGES: HOPE FOR TREATMENT OF TAY-SACHS DISEASE

BEVERLY A. POWELL,MD, FAAP, FAIRFAX HOSPITAL, FAIRFAX, VA

BACKGROUND: In 1999 a breeder of rare sheep, some of the Biblical era, observed that two lambs mysteriously fel l sick, regressed and died between 2 and 5 months. Symptoms included ataxia, cloud-ing of the cornea but no cherry-red spots or startle response. Fred Horak, who raised the Jesse sheep began a quest to discover the cause of this neurodegenerative disorder in lambs of his flock. He has collaborated with scientist at NIH & Auburn University as well as families seeking a cure for Tay Sachs.

METHODS: Extensive research into the literature, clinical findings and potential gene therapy as a result of the discovery of this animal model of Tay Sachs disease, which is an autosomal recessive disorder due to a deficiency in Hex A. Without normalamounts of Hex A, deposits of gangliosidase accumulate in the CNS and result in degenerative changes. In children, symptoms typically begin at 2-2.5 years of age with an exaggerated startle reponse, loss of developmental milesones, a cheery-red spot on the retina, onset of seizures, difficulty feeding and generalized decline with death by 5 years of age.
Jesse sheep are thought to have a milder (juvenile) form of Tay Sachs disease with 5% more Hex A on lab studies that children. In recent gene therapy studies, the lifespan of 2/3 of treated sheep was 14+ months and the degree of disability was less. In comparison lambs in the control group survived 7 monhs. The disease progression and lifespan were improved in lambs treated with gene therapy. MRI scans showed that there was less degeneration of the CNS following gene therapy. Injection of therapy into the brain and spinal cord was safe & well-tolerated. Studies are underway to determine whether a lower dose can be administered with similar positive effects. Scientists and physicians are hoping to enroll children in the initial trials of gene therapy within 1-2 years.

The IRISH Connection to Tay Sachs: Several articles mention that, in addition to Aschkenazi Jews and Eastern European people, Tay Sachs also affects children of Irish heritage. Research on this topic yield-ed articles by archeologists and geneticists documenting, based upon whole genome analysis, that remains of individuals from 4000-5000 BC match those of the modern Irish people. They postulate a mass migration from Eastern Europe of individuals who brought grain, practiced agriculture and animal husbandry. Physical feaures and aspects of language & culture were adopted by the indigenous people. With Tay Sachs disease affecting populations in Eastern Europe, it is understandable that it spread to the Irish. Studies are underway to determine the carrier rate.

CONCLUSIONS: A breed of rare sheep is an animal model for Tay Sachs disease and is being used by scientists and physician to explore the feasibility and safety of gene therapy in humans. In studies over the past 3 years, results have shown greater longevity, improved quality of life,and decreased disease progression with documentation on MRI scans. Human studies are pending in the next 2 years. It is im-portant to explore the carrier rate in the Irish population.

THE CASE OF A CURIOUS 3 YEAR OLD: CASE REPORT AND LITERATURE REVIEW

BD Power[1], JFA Murphy[1]
[1]Dept. of Paediatrics, Children's University Hospital, Temple Street, Dublin, Ireland

Aim: We report an interesting case of a sponge bezoar in a toddler with Down's Syndrome and autism.

Methods:

Numerous online databases were examined to identify relevant papers which could be included in this review. The clinical findings, radiological imaging and blood profile of the index case were reviewed.

Results:

We highlight the case of a 3 year old boy who presented with a 3 day history of abdominal pain, constipation and bilious vomiting. This boy had a diagnosis of Down's syndrome and autism. On clinical examination he appeared unwell. His abdomen was moderately distended, soft and non-tender. His white cell count ($30x10^9$/l), neutrophils ($29 x10^9$/l) and C-reactive protein (46mg/L) were elevated. An abdominal plain film radiograph showed gaseous distension of the upper abdominal bowel loops. On his second day of admission, a foreign object consistent with a sponge bezoar was passed in his bowel motions. A diagnosis of a sub-acute bowel obstruction secondary to an ingested sponge was made. This bezoar was managed conservatively with IV fluids, cefotaxime and flucloxacillin. Elimination of this foreign object resulted in a marked clinical improvement.

Conclusion:

Pica, the ingestion of non-nutrient material, has higher prevalence in children with intellectual disability, Down's syndrome and/or autism.[1 2] Although sponge/polyethylene foam material is the 4th most commonly ingested foreign body,[3] limited literature exists describing such ingestion in a paediatric cohort. A case report in 2010 (Altepeter et al)[4] described an intestinal perforation secondary to sponge ingestion, thus highlighting the associated potential risks of this ingestion. Management options (observation, endoscopic or surgical removal) are dependent on the patient's age, clinical presentation, type, size and anatomical location of the object.[5] This case report should alert physicians to the possibility of an ingested foreign object in paediatric patients who present with abdominal pain, constipation and vomiting.

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USING CORK SOUTHAMPTOM ALLERGEX CALCULATOR TO VALIDATE INCLUSION CRITERIA FOR A SINGLE, LOW DOSE CHALLENGE STUDY.

M Rizwan, G Galvin, J Hourihane
[1]Paediatrics, Cork university hospital, wilton cork, Ireland
[2]Paediatrics, University college Cork, cork, ireland
[3]Paediatrics, Cork university hospital, wilton cork, Ireland

Background:
Oral food challenge (OFC) is the gold standard for diagnosis of food allergy but is time-consuming. We examined the accuracy of preset criteria used to avoid OFC as an entry criterion for a research study involving a novel form of food challenge, using a single low dose of peanut.

Method:
The pre-study clinical data were known on 518 prospectively identified peanut allergic patients (378 participated in the study and 139 did not participate) in Cork,Boston and Melbourne. The parameters used in the previously validated Allergex on line calculator were age, sex, specific IgE, total IgE, and skin test wheal size.

Results:
The predicted outcome of OFC with peanut was 86% overall: Melbourne 93.3%, Cork 92% and Boston 73.3% while 68.34% in non-participants. Boston had the most missing data (SPT missing in 82 cases, SpIgE missing in 11) compared to Melbourne (2 missing SPT and 87 missing spIgE) and Cork (6 missing SPT and 2 missing SpIgE)

Conclusion:
It is possible to use pre-existing clinical data to assess risk of reaction in OFC and the calculator has previously been shown to tolerate occasional missing data points. However,it works better when SPT is available than when only spIgE is used without SPT and works best with complete sets of data. OFC remains the gold standard for research studies but the online calculator works very well when all required data are routinely available.

EXPLORING THE FACETS OF EMPATHY AND PAIN IN CLINICAL PRACTICE. A REVIEW.

J Roche, D Harmon
[1]Department of Anaesthesia and Pain Medicine, Limerick University Hospital, Dooradoyle, Limerick, Ireland

Background
Empathy is an essential element in providing quality patient care. The significance of empathy is even more striking in pain medicine, as chronic pain is notorious for the way it can compromise an individual leaving them isolated and feeling misconceived. This review examines the role of empathy in pain medicine practice.
Methods
Current and past literature focusing on empathy and pain was searched for in PubMed, Science Direct, Medline (Ovid), Medline (Ebsco), Research Gate and Google Scholar in July 2015. Search dates were not limited and languages included English only. Search terms were “empathy and pain”, “empathy and chronic pain”, “physician empathy and pain”, “neural mechanisms and empathy”, “empathy in clinical practice”, “empathy and stigma” and “empathy and medical students”. To select relevant publications, the title and abstract of every publication were examined, and when in doubt the rest of the publication was read.
Results
Four major themes were identified: (1) The neural basis for empathy and pain; (2) The value and challenges of practicing empathy pain medicine; (3) Stigma and empathy for pain; (4) Empathy and physician education and training.
Conclusion
The review reveals that empathy deserves an unchallenged place in medical care especially in pain medicine and medical education. It highlights the need to nurture empathy at all levels of professional expertise from medical student to senior doctors.

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COULD FULL BLOOD COUNT ON FIRST DAY OF LIFE BE USED TO SCREEN FOR SEVERE COMBINED IMMUNE DEFICIENCY?

AM Ryan[1], C Mooney[2], D Corcoran[1], N McCallion[1]
[1]Neonatology, Rotunda Hospital, Dublin, Ireland
[2]Biochemistry, Rotunda Hospital, Dublin , Ireland

Aims

Severe Combined Immune Deficiency (SCID) is an umbrella term for a group of heterogenous disorders arising from disturbed development of functional B and T cells (1). It is rare in the general Irish population, but occurs much more frequently in the minority population of Irish Travellers (1 in 2000 vs 1 in 58,000 in the general population) (2) (3). Early diagnosis is vital before severe infection occurs(4), and unless early bone marrow transplantation is performed the condition is almost universally lethal in the first year. The gold standard for diagnosis of SCID is the T-cell receptor excision circle (TREC) assay (5). This is expensive and not used in screening in Ireland. As lymphopenia (lymphocyte count $<1.5 \times 10^9$/L)is a potential incidental presentation of SCID, we investigated the possibility of using a full blood count (FBC) as a first line screening test.

Methods

We retrospectively examined the results of all FBC specimens taken in a 6-month period between June and December 2015. We excluded preterm infants, those with positive blood cultures and repeat samples. We defined 1.5×10^9/L as significant lymphopenia.

Results

There were 1239 relevant blood samples taken during the period of interest. Of these, only 10 specimens had an absolute lymphocyte count less than 1.5×10^9/L, giving an incidence of 0.8% of this finding.

Conclusion

As only 0.8% of normal newborns have a lymphocyte count $<1.5 \times 10^9$/L, day 1 FBC would be a cheap, pragmatic screening tool for children at high risk of SCID with a low likelihood of false positives. Early diagnosis is vital in these infants to prevent organ damage and ensure life saving bone marrow transplantation as early as possible.

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CAN EUROPEAN ESPGHAN GUIDELINES ON COELIAC DISEASE CATER TO THE EXPANDING ETHNIC DIVERSITY OF IRELAND AND EUROPE AS A WHOLE?

EM Ryan[1], E Dunne[1], V Healy[2], MJ Mahony[1]
[1]Deapartment of Paediatrics, University Hospital Limerick, Limerick, Ireland
[2]Department of Pathology, University Hospital Limerick, Limerick, Ireland

Introduction: Evidence based medicine the hallmark of good clinical practice dictates that peer reviewed clinical guidelines should be adopted as an approach to diagnosis and management of clinical presentations. Coeliac disease a systemic immune mediated disorder elicited by the presence of gluten and prolamines from wheat, rye and barley in the diet of genetically susceptible individuals has guidelines available from both the European (ESPGHAN) and British (BSPGHAN) Society for Paediatric Gastroenterology, Hepatalogy and Nutrition. Human leukocyte antigens HLA DQ2 and HLA DQ8 have a significant role within these guidelines and are strongly implicated in the genetic predisposition of symptomatic presentation of coeliac disease.
Case Report: A 6 year old girl presented with symptoms of abdominal bloating, pain and a variable bowel pattern. Anti tTG Antibodies were 10 times greater than the upper limit of normal for the assay, as per the guidelines, IgA EMA and HLA-DQ2 and HLA-DQ8 analysis was performed. The child was IgA EMA positive but HLA-DQ2 and HLA-DQ8 negative, a duodenal biopsy was therefore required to fully elicit the diagnosis.
Discussion: Ireland and Europe have an ever expanding ethnic diversity and Coeliac disease has mainly been studied in Europe and continents with a high proportion of European descendants namely North and South America and Australasia. The Northern African Swahari population have the highest worldwide prevalence of coeliac disease at 5.4% in combination with a high carriage rate of HLA-DQ2. Data pertaining to the serological screening for coeliac disease and HLA carriage in sub-Saharan Africa is very limited. The prevalence of HLA-DQ2 and HLA-DQ8 negative coeliac disease is less than 5% however with expanding ethnic diversity European guidelines may not identify coeliac disease in certain populations without the utilisation of invasive duodenal biopsy. Do current guidelines need to be revised to accommodate the ever expanding ethnic diversity within Europe?

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MALIGNANT PHENYLKETONURIA DUE TO DIHYDROPTERIDINE REDUCTASE (DHPR) DEFICIENCY

J Saeed, A Ventzke, J Hoffmann, PD Mayne, AA Monavari, E Crushell, I Knerr
National Centre for Inherited Metabolic Disorders, Children's University Hospital, Temple Street, Dublin

DHPR deficiency is a rare autosomal recessively inherited metabolic disorder of tetrahydrobiopterin (BH4) regeneration. Clinical symptoms may comprise microcephaly, developmental delay, ataxia and seizures. BH4 is the cofactor for the enzyme phenylalanine (Phe) hydroxylase (PAH), and for tryptophan and tyrosine hydroxylases, both of which are essential for serotonin and dopamine biosynthesis. DHPR deficiency is extremely rare but accounts for approximately one third of all forms of BH4 deficiencies. It is more frequent in areas around the Mediterranean Sea. The disease is generally suspected because of an elevated phenylalanine level upon new-born screening. It is diagnosed by measurement of decreased DHPR activity in blood cells. Other biochemical findings comprise reduced concentrations of serotonin and dopamine metabolites and active folate in cerebrospinal fluid. Neuroimaging can reveal calcifications, e.g. in basal ganglia, moderate loss of brain volume or diffuse white matter hyperintensities; it can also be normal despite significant clinical findings. The diagnosis of DHPR deficiency is confirmed by molecular genetic testing.

We present four patients in two families, age ranging from 2 years to 31 years (mean 16.5 yrs.), who are being treated at the National Centre for Inherited Metabolic Disorders (NCIMD) TSCUH. All are members of the Irish Traveller population. We have identified a homozygous mutation, c.353C>T, in the *DHPR (QDPR)* gene which, to the best of our knowledge, has not been previously described. The mainstay of treatment is a life-long Phe-restricted diet together with supplementation of L-dopa and 5-hydroxy tryptophan and folinic acid. In Ireland, there is neurological comorbidity in our adult DHPR patients, although the overall outcome is satisfactory and one affected female has three healthy children.

SMART PHONE APP DEVELOPMENT AND IMPLEMENTATION FOR A PAEDIATRIC DEPARTMENT: 1 YEAR RETROSPECTIVE ANALYSIS.

J Sheehan, S Sheehan, V Veitch, K Coleman, E Moylett
[1]Paediatric, Galway University Hospital, Galway, Ireland

Aims:
Develop a smart phone app that is useful for the medical staff and students of the department. Build a multifunctional tool and improves the efficiency of the department.

Methods:
Analysis was undertaken identifying key reference materials used in the department. A paper based handbook guide for new doctors and students was converted into digital content in the form of a smart phone app. This handbook provided useful information including departmental guidelines, common neonatal problems, and common paediatric emergencies. Further key functions were added to the app including a calendar, news reel and contact information.

Results:
GUH Paediatric App was uploaded to both the apple and android stores on July 1st. Google analytic software linked to the app was used to track statistics. From July 1 to June 15th, there were a total of 771 downloads. The app itself was used approximately 5,204 times. For each individual session the average time the app was used was 5 minutes and 27 seconds. During this time, an average of 10 screens were viewed. 49,072 different screens were viewed in total throughout the year. Analysis of trending showed increased uptake at the time of student exams with the greatest peak in screens viewed (1,431) occurring on May 4th, the date of the final exam. Usage was expectedly higher during the working week, but was still used to a lesser extent during the weekend consistent with NCHD and Consultant use.

Conclusion:
A smart phone app for any department is statistically proven to be a useful multifunctional tool. Paper based guidebooks are content rich, but efficient poor and should be converted into digital based smart phone apps to ensure increased usage.

https://itunes.apple.com/ie/app/guh-paeds/id1012916470?mt=8
https://play.google.com/store/apps/details?id=com.hospitalcontact.paediatrichandbook&hl=en_GB

INTRODUCTION AND CAPACITY BUILDING OF NEONATAL RESUSCITATION PROGRAM (NRP) OF AMERICAN ACADEMY OF PAEDIATRICS(AAP) IN PAKISTAN

NK Sheikh[1], RK Shahzad[2], JN Maryke[3]

[1]Neonatology Registrar, Children's University Hospital,Temple Street, Dublin, [2]Managing Director, Institute of Learning Emergency Medicine,University of Health Sciences, Lahore, Pakistan, [3]Paediatric Trainee, Mersey Deanery, Liverpool, United Kingdom,

Background:

Pakistan has the third highest neonatal mortality rate in the world (1). Prematurity, birth asphyxia (2) are the leading causes of neonatal death and are closely linked to obstetric factors (3). Inadequate training and a lack of resources, contribute to substandard care and hence neonatal deaths (4, 5).

The NRP Provider Course of AAP introduces the concepts and a basic skill of neonatal resuscitation.(6)

Aim: To introduce and build capacity in neonatal resuscitation in Pakistan according to AAP guidelines.

Methods: NRP, 6th Edition was introduced for the first time in Pakistan through a partnership between the Institute of Learning Emergency Medicine, University Of Health Sciences (ILEM, UHS) Lahore and NRP instructor certified in Ireland.

NRP 6th Edition was provided to all the participants, followed by skills training, written exam with passing score of 80% as per AAP guidlines.

Candidates who attended hands on training and passed the written exam were deemed certified. Limitations in internet access prohibited the use of an online exam.

Results: A total of 17 courses were held, with 201 participants being taught (1 course with 13 participants in 2014; 8 courses with 72 participants in 2015 and 8 courses with 116 participants in 2016). Participants were predominantly female [126 (62.6%)] and predominantly doctors [141 (70.14%)]. Allied health professionals accounted for 30% of participants [nurses 55 (27.3%), paramedics 4 (1.94%), others 1 (0.49 %)]. To date, 73 (36.3%) participants have completed the written exam. Of these, 58(79.4%) passed with the remaining 15 (20.5%) needing remediation. 88 (43.7%) did not attend for the written exam and, 40 (19.9%) are waiting to sit the exam.

Conclusion: Simulation training followed by a written exam can effectively improve technical skills and teamwork in neonatal resuscitation and is the first step to improving neonatal morbidity and mortality in Pakistan

Table 1.1 NRP courses demographic

Total Courses	17	
	Courses in 2014	1 (5.8%)
	Courses in 2015	8 (47%)
	Courses in 2016	8 (47%)
Total Participants	201	
Gender	Male	75 (37.3%)
	Female	126 (62.6%)
Profession	Doctors	141 (70.14%)
	Nurses	55 (27.3%)
	Paramedics	4 (1.9%)
	Others	1 (0.49%)
Qualification	Graduates	101 (50.2%)
	Post Graduates	89 (44.2%)
	Undergraduates	11 (5.4%)
Written Exam	Appeared	73 (36.3%)
	Pass	58(79.4%)
	Remediation	15 (20.5%)
	Waiting for Exam	40 (19.9%)
	Not Appeared	88 (43.7%)

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A REVIEW OF ANAESTHETIC OUTCOMES IN PATIENTS WITH GENETICALLY CONFIRMED MITOCHONDRIAL DISORDERS

A Smith[1], E Dunne[2], M Mannion[1], C O' Connor[3], I Knerr[1], A Monavari[1], J Hughes[1], N Eustace[2], E Crushell[1]
[1]National Centre for Inherited Metabolic Disorders, Temple Street Children's University Hospital, Dublin, [2]Department of Anaesthesia, Temple Street Children's University Hospital, Dublin, [3]Department of Metabolic Medicine, Our Lady's Children's Hospital, Crumlin, Dublin,

Background
Mitochondrial disorders are a clinically and biochemically diverse group of disorders which may involve multiple organ systems General anaesthesia (GA) poses a potential risk of decompensation in children with mitochondrial disorders and there is little guidance for anaesthetists and other clinicians regarding the optimal anaesthetic agents and perioperative management to provide to patients with mitochondrial disease (1).

Aim
The aim of this review was to document adverse events and perioperative complications from GA in patients with genetically confirmed mitochondrial disorders.

Methods
A retrospective chart review of patients with genetically confirmed mitochondrial disorders who had undergone GA was undertaken. The indication for GA, anaesthetic agents utilised, length of admission and post anaesthetic complications were documented and analysed.

Results
26 patients with genetically proven mitochondrial disease underwent 65 GAs. 34 (52%), received propofol as their induction agent. 33 (51%) patients received sevoflurane for the maintenance of anaesthesia, while 8 (12%) received isoflurane and 24 (37%) received propofol. Perioperative complications occurred in five patients while under GA including ST segment depression, hypotension and metabolic acidosis. All five patients were stabilised successfully and none required ICU admission as a consequence of their perioperative complications.

Conclusion
Despite theoretical concerns, adverse events directly attributable to GA were uncommon in this cohort. No relationship between choice of anaesthetic agent and subsequent peri-operative complication was observed. It is likely that individual optimisation on a case-by-case basis is more important overall than choice of any one particular technique.

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DELAYED INFANT SUBAPONEUROTIC (SUBGALEAL) FLUID COLLECTIONS: A CASE SERIES OF 11 INFANTS

A Smith[1], N Kandamany [1], I Okafor [1], I Robinson[2], A Foran[3], R McNamara[1]
[1]Emergency Department, Temple Street Children's University Hospital, Dublin, [2]Radiology Department, Children's University Hospital, Dublin, [3]Neonatology Department, Rotunda Hospital, Dublin

Background: Although sub galeal haemorrhage can present very soon after delivery with catastrophic consequences subaponeurotic or subgaleal fluid collections are a rare and clinically distinct cause of infant scalp swelling which present weeks to months after birth. Their exact aetiology remains uncertain; however they are frequently associated with instrumental and traumatic delivery.

Aim & Methods: To characterise eleven subaponeurotic fluid collections which presented to the Temple Street Children's University Hospital Emergency Department (TSCUHED) from July 2013 to July 2015 by a retrospective chart review.

Case Report: Eleven infants were identified with delayed subaponeurotic fluid collections. Of note all infants were either successful vacuum delivery or failed vacuum delivery with subsequent forceps delivery or emergency caesarean section. All infants were otherwise well at presentation and resolution of the scalp swelling occurred within weeks to months.

Why should a physician be aware of this?
Subaponeurotic fluid collections are primarily a clinical diagnosis and it is important for clinicians to be aware that this condition is benign, investigations are not routinely required and that spontaneous resolution occurs within weeks to months.

INSULIN RESISTANCE IN CHILDREN ATTENDING AN OBESITY SERVICE IN IRELAND

MS Smyth[1], OT Thorpe[2], SM Murphy[1, 2], SD Doyle[1,2]
[1]Faculty of Paediatrics, UCD, Dublin, Ireland
[2]The Children's University Hospital, Temple Street, Dublin, Ireland

Childhood obesity is a major public health concern and failure to tackle this issue will lead to greater costs, both health and economic, in the future.

Aim:
The aim of this study was to investigate the incidence of insulin resistance in a group of children attending an obesity service.

Method:
The target population are a group of obese children (Body Mass Index (BMI) >98TH centile on a sex specific BMI chart) attending an obesity service at The Children's University Hospital, Temple Street.
We retrospectively reviewed their fasting glucose and insulin levels to assess for insulin resistance. The samples were taken at their initial assessment prior to treatment with a healthy lifestyle intervention. All blood sampling was performed in the fasting state and analysed in an accredited laboratory. Children included in this review had no detected cause for their obesity and were not on obesogenic medication. Full Ethics approval was awarded by the Temple Street Ethics department.

Results:
Of the 76 children who had fasting bloods taken, 15 (19.7%) of the children had insulin resistance (fasting insulin >174 pmol/L), 6/15 were male and 9/15 female. Insulin range was (14.4- 309pmol/L). There were no abnormal HbA1c levels and the fasting glucose was normal in all children except 2 who were later diagnosed with type 2 diabetes. These were male siblings.

Conclusion:
The incidence of insulin resistance is high in this group. This represents a tremendous problem in caring for these children as their obesity and co-morbid insulin resistance are likely to track into adulthood with type 2 diabetes and all of its complications likely to follow.
Childhood obesity is a serious public health concern which requires multi- disciplinary input to resolve from within and outside the medical community.

"IRON STUDIES, IT'S TIME TO STOP AND THINK!"

A. Sokay, P. Gallagher, Midlands Regional Hospital, Mullingar

Background:

- Iron Deficiency Anaemia (IDA) is defined as; HB <2 SD below the mean for age and gender and ferritin < 12µg/mL[1]
- Current hospital practice for IDA diagnosis is: FBC +/-Iron studies +/- ferritin.
- Best practise:
  - American Academy of Paediatrics[2]: FBC and Ferritin. Iron studies are indicated only in cases of severe anemia.
  - British Journal of Haematology[3]: FBC and ferritin

Aim:

1. To determine how many iron studies were done during the study period.
2. How many of these children had a ferritin performed. (needs to be specifically requested)
3. Develop a local best practice guideline and then re-audit.

Method:

- A retrospective analysis was performed on children < 15 years of age attending MRHP who had either iron studies and / or a serum ferritin measured
- This covered a 1 year period Jan 2014-Dec 2014. Laboratory data was collected using HIPE and included FBC, Iron studies and ferritin.
- Results were recorded and analysed on Microsoft excel

Results:

- 36 Iron studies were performed during the study period. 11 of these had no ferritin analysis
- 27 Iron studies were requested on children with a normal Hb.

Conclusion:

- Current practice is not in line with best practice i.e. in all the cases we reviewed, iron studies were not necessary and did not help in making the diagnosis of IDA or iron deficiency
- There are cost and time implications for the laboratory by performing these unnecessary investigations
- Serum ferritin is a useful investigation even with a normal Hb. This should be the investigation of choice in children with a normal Hb and low MCV, NOT Iron studies.

Recommendations:

1. Adherence to best practice in the diagnosis of iron deficiency and cessation of iron study requests
2. A local guideline has been developed for staff education and to ensure standardisation of investigations
3. Re-Audit in 1 year to evaluate adherence to new guideline

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AN AUDIT AND QUALITY IMPROVEMENT PROJECT ON THE DIAGNOSIS AND MANAGEMENT OF TONSILLITIS

L Speirs[1], C Keel[1], A Kearney[1], L McFetridge[1, 1]Paediatric Department, Antrim Area Hospital, Antrim, Northern Ireland

BACKGROUND: It is difficult to differentiate clinically between viral and bacterial tonsillitis. The current gold standard of testing is a throat swab for culture, results of which take 48 hours. In the UK, guidelines exist to aid management, which recommend using a clinical scoring system, such as the Centor-McIsaac criteria, to determine the likelihood of bacterial tonsillitis. (1,2) Therefore inappropriate antimicrobial use can be limited. A retrospective audit in our department in February 2015 found no positive throat swabs yet high rates of antibiotic prescribing.

AIM: To determine if implementation of Centor-McIsaac criteria in our department leads to more rational antibiotic use.

METHODS: A 'pre-throat swab checklist' was created based on Centor-McIsaac criteria (see Figure 1).

Figure 1: Centor-McIsaac Criteria[(3)]

Criterion	Score
Age 3-14	1
Tonsillar swelling or exudate	1
Fever >38^{o}C	1
Tender anterior cervical lymphadenopathy	1
Absence of cough	1
TOTAL	**0 or 1:** No culture or antibiotic (Risk of bacterial infection 2–6%) **2 or 3:** Culture all; treat positives (Risk 10–28%) **4 or 5:** Culture and treat (Risk 38–63%)

All patients who had throat swabs taken from September to December 2015 were included in the audit of clinical practice which was performed as a retrospective case note review.

RESULTS: Of 61 patients, aged from 2 weeks to 15 years, 6 children (9.8%) had a bacterial aetiology, most commonly *Group A Streptococcus*. The checklist was used in 52% of cases, all of which were cultured appropriately. Despite use of the checklist, recommendations for subsequent treatment were not followed in 25%, leading to unnecessary antibiotic use. Overall, 62% of all patients received antibiotics, compared to 86% in February 2015. When the checklist was used, unnecessary prescriptions were reduced by 10%.

CONCLUSIONS: There was a low uptake of the checklist sticker, reflecting the difficulty of changing clinical practice. However a lower percentage of patients were prescribed antibiotics. The use of the checklist appeared to reduce the percentage of patients receiving antibiotics inappropriately. In an era of emerging antimicrobial resistance, judicious use of antibiotics remains a priority. Education of both physicians and parents is key to achieving this.

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THE IMPACT OF AGE AND AETIOLOGY ON LONG TERM OUTCOMES IN CHILDREN ON HOME PARENTERAL NUTRITION

R Stanley[1], T Raftery[2, 4], S Sugrue[1], M Hurley[2], A Bryce-Smith[2], AM Broderick[2 - 4], B Bourke[2 - 4], S Hussey[2 - 4]
[1]School of Biological Sciences, Dublin Institute of Technology, Dublin , Ireland
[2]National Centre for Paediatric Gastroenterology, Our Lady's Children's Hospital Crumlin, Dublin, Ireland
[3]Academic Centre for Paediatric Reasearch, School of Medicine and Medical Sciences, University College Dublin, Dublin, Ireland
[4], National Children's Research Centre, Dublin, Ireland

Introduction:
Home parenteral nutrition (HPN) is the intravenous administration of nutrients and fluids via a central venous catheter in the patient's home. Internationally, outcomes have improved for children since HPN was first introduced. However, Irish paediatric HPN outcome data is limited. The aim of the present study was to describe the long-term outcomes of the Irish paediatric HPN population and to analyse the influence of age at parenteral nutrition (PN) onset and aetiology of intestinal failure on these outcomes.

Method:
Data were extracted retrospectively from medical records. All children in Ireland commenced on HPN between the 1st January 2000 and the 28th February 2015 were included. Data were collected from the date of PN commencement in hospital until the end of the most recent year, death or until one year post HPN. Aetiologies were classified as either medical or surgical, PN commencement time as having begun before or after 6 months of age. Data was compiled and analysed the SPSS statistical package.

Results:
A total of 32 patients were enrolled on the HPN programme. Currently, 13 patients continue on HPN. The mortality rate was 28% (n = 9) and the weaning rate was 31% (n = 10). The incidence of central line sepsis was 2.3 *per* 1000 days of HPN. PN associated liver disease was highest in surgical patients (9/11, 81%) who began PN < 30 days old ($p < 0.03$). Surgical patients who began PN < 6 months were weaned from HPN quicker (8/10, 80%) than medical patients who began PN < 6 months (2/10, 20%) ($p < 0.03$). Surgical patients had a higher mean height z-score ($p < 0.004$) and mean weight z-score ($p < 0.01$) in their first year on HPN than medical patients.

Conclusions:
A surgical diagnosis and a younger age at parenteral nutrition onset affect PN associated liver disease risk and weaning rate. A surgical diagnosis is also associated with normal growth on HPN. A medical diagnosis is associated with a longer duration of HPN and poorer growth outcomes.

NEONATAL PATIENTS IN THE PAEDIATRIC INTENSIVE CARE UNIT: THE NEONATAL CHECKLIST.

A Stobo[1], E McCorry[1], J Richardson [1]
[1]Paediatric Intensive Care Unit, Royal Belfast Hospital for Sick Children, Belfast, Northern Ireland

Aims

The neonatal population admitted to paediatric intensive care unit (PICU) is a unique one with its own individual issues, diagnostic complexities and management particulars. Furthermore, neonatal patients often require routine referrals, investigations and interventions that are not necessarily pertinent to their acute management in the intensive environment. These issues are however important to the overall holistic approach to this special group of patients.

Observational practice within PICU suggests that, when neonatal patients are managed outside the traditional neonatal unit, these issues are not always in the forefront of peoples' minds and investigations or referrals are easily overlooked. Given these observations we felt it necessary to look at the neonatal population within our paediatric intensive care setting and adopt a failsafe way of ensuring no aspects of management were missed. We felt the ideal way of the clinical team avoiding this was to compile a neonatal checklist.

Methods

A neonatal checklist was designed with local, regional and national guidelines in mind and details four main areas of neonatal management: growth parameters, screening and investigations, immunisations and multidisciplinary referrals. The checklist was introduced as part of the admission documentation for neonatal patients. Both medical and nursing staff have been engaged in the introduction of the checklist and all have responsibility for completing the checklist. It has been designed to be reviewed on a regular basis, routinely on ward rounds.

Results and Conclusions

The introduction of the neonatal checklist into PICU represents an important improvement in the care of neonatal patients outside a specialised neonatal unit. With the introduction of this checklist we are ensuring that unique aspects in the management of our neonates are not overlooked or neglected. It ensures a safe, effective and patient centred approach to management that can be adopted through various areas of clinical paediatric care.

AUDIT OF HYPOGLYCAEMIA WORK-UPS PERFORMED IN THE TEMPLE STREET CHILDREN'S HOSPITAL EMERGENCY DEPARTMENT

Stone G, Quinn E, Okafor I
Emergency Department, Temple Street Children's Hospital, Dublin

AIMS

Hypoglycaemia is one of the most common metabolic emergencies presenting in paediatrics, requiring prompt diagnosis and management to prevent potentially irreversible cerebral damage. The prevalence of hypoglycaemia among populations seeking care in Paediatric Emergency Departments has been found to be 6.54/100,000 visits (Pershad J, 1998). Revised Temple Street Hypoglycaemia Work-up Guidelines were introduced on 12/2/15. This audit is to investigate the compliance of the Temple Street Emergency Department with these guidelines.

METHODS

A retrospective audit of all patients in whom hypoglycaemia work-ups were performed for the period 12/02/2015 to 07/08/2015. The appropriateness of investigations was then determined compared to the Hypoglycaemia Work-up Guidelines. Patients whose case notes were unavailable or with a medical history of Type 1 Diabetes Mellitus were excluded from analysis.

RESULTS

N=55 patients presented to the Temple Street Emergency Department with hypoglycaemia in the period 12/02/2015 to 07/08/2015. N=1 patient was excluded from analysis as case notes were unavailable. N=38 (69%) of cases were female, n=17 (31%) of cases were male. The median patient age was 1.71 years (IQR 1 to 2.79 years). N=54 (100%) of cases were categorised as Category 2. N=49 (91%) of cases had a diagnosis of viral gastroenteritis. N=10 (19%) had hypoglycaemia work-ups performed inappropriately

CONCLUSION

This audit concludes that the Temple Street Emergency Department was 81% compliant with the revised hypoglycaemia work-up guidelines from 12/02/2015 to 07/08/2015. This audit highlights the need for staff education in relation to appropriate hypoglycaemia work-up. This is important financially, due to the parental anxiety these work-ups cause and the man-hours spent processing these samples.

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MELAS, A DIAGNOSIS NOT TO BE MISSED IN PATIENTS WITH STROKE; A CASE SERIES

Quinn N[1,4], Stone G[1,4], Brett F[2], Dominguez PC[3], Neylon O[1], Hughes J[4], Lynch B[5]
1. Department of Paediatrics, Sligo Regional Hospital.
2. Department of Histopathology, Beaumont Hospital, Dublin
3. Department of Radiology, Children's' University Hospital, Temple Street, Dublin.
4. National Centre for Inherited Metabolic Disorders, Children's' University Hospital, Temple Street, Dublin.
5. Department of Neurology, Children's' University Hospital, Temple Street, Dublin

AIMS

MELAS (Mitochondrial Encephalomyopathy, Lactic Acidosis and Stroke) is a very rare mitochondrial disorder. Features include developmental delay, stroke like episodes, exercise intolerance, hearing loss, cardiomyopathy, short stature and fatigue. The disease remains progressive and fatal. We describe two cases of MELAS where the characteristics were evident but the diagnosis was not made for a considerable period of time.

RESULTS

Case 1 was an ex-premature male with LVH, mild developmental delay, bilateral sensorineural hearing loss. Aged 16 he presented twice to the ED with unilateral weakness in association with confusion, headache and clumsiness. On second presentation he had 3 seizures, which prompted further investigation. The combination of learning difficulties, deafness, short stature and stroke made MELAS likely. Unfortunately he exhibits significant residual dysphasia and reduced cognition.

Case 2 was a male with mild global developmental delay and macrocephaly. Aged 9 he presented to ED with confusion, headache & left sided hemiplegia, his presumed discharge diagnosis was subclinical status epilepticus. Within the next 2 months he attended the ED x3 times with alternating hemiplegia & headache leading to intubation, ventilation and transfer to paediatric intensive care unit. On 3rd presentation a venous blood gas showed lactic acidosis (pH 7.16, Lactate 10.3). The combination of encephalopathy, lactic acidosis and stroke like episodes made the diagnosis of MELAS likely.

CONCLUSION

Both patients developed stroke-like episodes, a hallmark of MELAS. It is important that distinction between seizures and stroke is made: case 2 attended three times with alternating hemiplegia, and as a result of benzodiazepine administration suffered x3 respiratory arrests. This extreme reaction to benzodiazepines is rare, and has not been previously reported in patients with MELAS. This report wishes to draw attention to the consideration of MELAS in a patient with acute stroke, particularly when more than one organ system is affected.

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AN AUDIT CYCLE MONITORING TEMPERATURE CONTROL OF THERAPEUTIC HYPOTHERMIA IN THE TREATMENT OF HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Stone G[1], Dumin S[1], Mulvany S[1], Krebit I[1], Al-Assaf[1], Foran A[1]
1. Department of Neonatology, Rotunda Hospital, Dublin

AIMS

Hypoxic ischaemic encephalopathy is due to a perinatal hypoxic insult causing cerebral ischaemia. Therapeutic hypothermia is currently the only therapy available for the management of these babies (1). Neonates who meet cooling criteria are cooled by whole body cooling to 33-34°C within 6 hours of birth for a period of 72 hours. They are then gradually re-warmed by 0.5° C every 2 hour over a minimum of 12 hours (2).

METHODS

This audit cycle evaluated the effectiveness of servo-controlled mattresses and education sessions highlighting the importance of strict temperature control. A retrospective chart review of cases receiving therapeutic hypothermia in the Rotunda NICU from 01/04/2009 to 21/12/2011 was conducted. The initial audit was conducted from 01/7/2012 to 01/07/2016. Variables recorded included; Gender, Gestational Age, Birth Weight, Age at onset of cooling, Temperature at the start of cooling, Highest Temperature Recorded, Lowest Temperature Recorded and Time spent at various temperatures.

RESULTS

From 01/04/2009 to 21/12/2011, n= 21 cases were identified. Male to Female ratio was 13:8. Median gestation was 40 weeks (Range 37+3 to 41+6 weeks). Median birth weight was 3.5kgs (Range 2.6 to 4.9 kg). Median onset of cooling was 4.2 hrs (Range 0.7 to 8.2 hrs). Of temperatures measured, 72% fell between 33C and 34C.

From 01/7/2012 to 01/07/2016, n= 46 cases were identified. Male to Female ratio was 28:18
Median gestation was 40+2 weeks (Range 36+3 to 41+6 weeks). Median birth weight was 3.6kgs (Range 2.6 to 5.2 kg). Median onset of cooling was 2.5 hrs (Range 0.8 to 15.3 hrs). Of temperatures measured, 93% fell between 33 and 34C.

CONCLUSION

There was interval improvement in temperature control during the cooling period. This has likely been due to staff education, servo-controlled mattresses, greater clinical experience with “temperature controlling” and increased awareness in the medical literature.

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COMPARISON OF OUR CURRENT PRACTICE IN TAKING PAEDIATRIC BLOOD CULTURE SAMPLES WITH THE STANDARD GUIDELINES

SA Taj[1], S Ahmad[1], M Akram[1]
[1]Paediatrics, St. Lukes General Hospital, Kilkenny, Ireland

Aim: To evaluate our current
practice of the amount of blood samples being taken for culture and sensitivity and compare it to the standard guidelines.

Methodology: Prospective study of 53 blood culture samples which were taken in our
PAU in January 2016 to rule out
Sepsis/Bacteraemia.
Blood culture Bottle: BacT/ALERT PF Plus (Paediatric Aerobic blood culture bottle-Yellow cap)
Nurses in Paediatric Treatment room observed the technique of blood culture sampling and the amount of blood being taken for purpose of blood culture sample, after completion of the procedure nurses entered the detail in a checklist without informing the doctor.

Results:Total 53 blood culture samples were analysed, Out of which 45 blood samples were noted to be less than 1ml and none of sample contained blood sample more than 4ml. Only 2 blood cultures came back positive which contained blood sample 0.5 to 1ml.

Conclusion: While taking a blood culture sample we must make sure that we are putting not less than 4ml of blood in the BacT/ALERT PF Plus bottle, otherwise we can get false negative culture results that may affect the management of a sick child.

Use of lower amount of sample may adversely affect recovery and/or detection times of some organisms. The bottle's recommended specimen volume is upto 4 ml and the volume collected should be monitored by means of the 4ml incremental markings on the bottle label[(1).] For the BacT/ALERT PF plus Paediatric bottle, inoculate up to a maximum of 4ml[(2).] We should take definitive steps to spread awareness of the importance of sufficient amount of blood culture samples.

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ROLE OF CPAP IN MANAGEMENT OF PRETERM NEONATES WITH RESPIRATORY DISTRESS SYNDROME IN SCBU. A CLOSED LOOP AUDIT.

SA Taj[1], SA Butt[1], A Haider[1], W Asif[1]
[1]Paediatric Ward, St. Lukes General Hospital, Kilkenny, Ireland

Aim: To evaluate and compare our current practice of managing preterm neonates with respiratory distress who required respiratory support with the standard guidelines and the role of CPAP.

Methodology: Retrospective charts and lab review from the medial records of SCBU.
Preterm neonates with respiratory distress syndrome who required respiratory support in SCBU prior to CPAP availabilty were studied between Sep 2014 to October 2015 and then Re-audit was performed post CPAP availability from October 2015 to June 2016.

Results: Total n=26 preterm neonates with RDS who required respiratory support pre and post availability of CPAP. In comparison with the pre availability of CPAP audit, after induction of CPAP in our SCBU in October 2015, we managed:

- 72% less neonatal transfers to tertiary hospitals
- 50% less Endotracheal intubations
- 72% less Mechanical ventilation
- 50% less Surfactant use
- Significant reduction in hospital stay.

Conclusion: Our study clearly depicts this as availability of CPAP reduced 72% of transfers, 50% intubations and 50% of surfactant usage; which saves significant amount of money, avoids possible complications from invasive ventilations and avoids unnecessary baby-mother separation.
So we conclude CPAP should be gold standard as initial management strategy for preterm neonates with RDS and we aim to continue this in our unit.

(1) European Consensus Guidelines on the management of neonatal Respiratory Distress Syndrome in Preterm infants-2013 Update. (2) Guidelines for good practice in the management of neonatal respiratory distress syndrome.

URINARY TRACT INFECTION IN CHILDHOOD AND INFLAMMATORY MARKERS

S Tamgumus, J Geoghegan, M Nadeem
[1]Paediatrics, AMNCH, Tallaght, Dublin, Ireland

Aims

We set out to determine whether peripheral blood tests correlate with urinary culture.

Methods

We performed a retrospective study of all patients admitted with UTI in 2014 in AMNCH and their blood results. Patients with a urine culture growth of a single organism of significant colony count were included in this study.

Results

We studied 135 patients admitted with UTI, mean (SD) age 3.0(4.1) years. Escherichia coli was documented in 126(93.3%) patients, Enterobacter [2 (1.5%)], Klebsiella [2(1.5%)], Proteus [1(0.7%)], Pseudomonas [2(1.5%)], Staphylococcus aureus 1(0.7%)] and Streptococcus pyogenes [1(0.7%)]. Blood culture was performed in 126 of 135 patients (93.3%), of whom 123(91.1%) had negative blood culture; 3(2.2%) patients experienced E. coli in both urine and blood culture.

121 (89.6%) had > 50 WCC/cm^3 in urine and 13(9.6%) experienced 10- 50 WCC/cm^3. However one patients had < 10 WCC/cm^3 in urine, this was 10- 50 WCC/cm^3 in repeated sample on the same day. In this group of patients, 95 of 135(70.4%) experienced leukocytosis [mean (SD) serum WCC 17.41 (6.9) $X10^9$/l] and 102 of 135 (75.6%)] had neutrophilia [mean (SD) neutrophil values 10.9 (6.0)] $X10^9$/l. The majority of patients [118(87.4%)] experienced CRP > 5 mg/L [mean (SD) 69.4(65.7)]. Of 135 patients, 16(11.9%) had combined normal serum WCC, normal neutrophil count and CRP < 5 mg/L.

Conclusion

In conclusion, approximately 1 in 8 patients with UTI have combined normal serum WCC, normal serum neutrophil values and CRP <5 mg/L. The majority of patients (89.6%) with UTI had > 50 WCC/cm^3 in urine, however, approximately, 1 in 10 patients with UTI experienced 10-50 WCC/cm^3 in urine. In children, urine should be tested for UTI in those with clinical signs and symptoms, even in presence of combined normal serum WCC, normal neutrophil and CRP <5 mg/L.

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NETS, PETS and PIPER: An Evolving Service in Royal Childrens' Hospital, Melbourne

K Tanney, M Stewart
[1]PIPER Neonatal, Royal Childrens' Hospital, Melbourne, Australia

Aims

From RCH, Melbourne, PIPER (Paediatric Infant Perinatal Emergency Retrieval) provides state-wide retrieval for 1,700 sick babies and children annually. PIPER is comprised of Newborn Emergency Transport Service (NETS) and Paediatric Emergency Transport Service (PETS) together. The two services are currently distinct and staffed separately, with NETS retrieving infants < 6 months old, due to equipment and skills required for stabilising and moving preterm and small babies versus those needed for larger children and adolescents. There remains a heavy infant work-load for PETS, particularly in the winter months, placing strain on combined services and occasionally leading to delays in retrievals.

Service pressures led to the initiative to extend the NETS age-group and allow cross-covering. However, neonatal medical staff in particular reported concern around carrying out paediatric retrievals, depending on individual training and experience.

Methods

To assess training required to allow cross-cover, from February to August 2015 we carried out an audit entitled "PETS Retrievals – NETS Fellows' Barrier Assessment". We included on-site NETS staff in PETS conference calls, clarifying perceived areas of "missing" clinical skills.

Results

We collated 50 Barrier Assessments from PETS calls with referral age-range 2 months to 15 years. 56% of referrals were Respiratory in origin, followed by Sepsis (10%), Neurological (8%), then Ingestion and Haematological at 6%. The biggest *perceived barrier* was airway management in the bigger child, with other concerns around central access, medical management and knowledge of appropriate equipment.

Conclusion

Following Barrier Assessment, initiatives for up-skilling were commenced - repeated 2-day education sessions for NETS staff, targeted clinical teaching sessions, and rostering attendance in paediatric theatre for airway experience. At this stage, ceiling for NETS retrieval age has been advanced to 1 year old, with the ongoing goal of increasing PIPER cross-cover to combat challenges of service pressure and maximise efficiency of this evolving service.

THE IMPRUDENT UTILISATION OF BLOOD CULTURES IN THE PAEDIATRIC SETTING WHEN DISCHARGING PATIENTS FROM THE EMERGENCY DEPARTMENT

JW Teh[1], R Pereira[1], B Hanahoe[2], E Moylett[1, 3]
[1]School of Medicine, National University of Ireland, Galway, Ireland
[2]Department of Microbiology, University College Hospital Galway, Galway, Ireland
[3]Department of Paediatrics, University College Hospital Galway, Galway, Ireland

AIM: To ascertain the extent and outcome of performing blood cultures in paediatric patients being discharged from the Emergency Department (ED). In addition we also report the blood culture data for a 6-month period as performed on children with medical complaint presenting to the ED.

METHODS: The setting, a tertiary adult ED with paediatric facilities, approx 15,000 children reviewed annually, 50% with a medical complaint. Study period October 2015 to March 2016. Retrospective review of the Microbiology Database at University Hospital Galway identified all individuals <16 years with a blood culture sent from the ED. ED patient records were reviewed for all children discharged home with a blood culture as part of their evaluation. Relevant laboratory and clinical information were recorded. Discharge summaries were explored to identify any representation and subsequent admission following discharge from the ED.

RESULTS: During the study period, 450 patients aged 16 and under had blood cultures sent from the ED; 119 (26.44%) were discharged home. Of the 450 blood cultures, 29/450 (6.44%) were positive, 4/450 (0.88%) true positive (1 E. coli, 1 group B streptococcus, 2 group A streptococcus) the remainder skin contaminants (see table 1). Among those discharged from ED, 6.72% (8/119) represented with a similar complaint, 6/8 were admitted. The rate of blood culture positivity among the 119 discharged was 4.2% (5/119), all likely contaminants; 1 of 5 of these culture positive patients represented, negative repeat culture, likely contaminant.

CONCLUSION: In this study of low risk patients presenting to the ED, blood cultures should not be performed as part of the evaluation for children being discharged home. Unnecessary additional cost is incurred in addition to the risk for false positive results being repeated.

Table 1: Laboratory parameters: 119 patients discharged from the ED with blood cultures performed

	Presented to ED Febrile (n = 45)	**Presented to ED Afebrile (n = 74)**	**Represented to the ED (n = 8)**
Age, mo (average, range)	78.24 [7, 199]	80.10 [1, 199]	80.38 [4, 198]
WCC (average, range)	8.51 [2.6, 18.8]	8.87 [2.2, 19.4]	10.95 [2.7, 18.4]
Neutrophils (average, range)	6.39 [0.9, 15.4]	5.23 [0.6, 16.6]	6.99 [1.4, 16.6]
CRP (average, range)	20.40 [0.7, 168]	16.07 [0.6, 194]	19.57 [1.6, 47.1]
Positive blood culture (%)	1 (2.22)[a]	4 (5.41)[b]	1 (12.5)[c]
Underlying medical condition present (%)	6 (13.33)	18 (24.32)	2 (25)

[a]*Coagulase negative staphylococcus (CoNS), Staphylococcus warneri, Staphylococcus epidermidis*
[b]*CoNS, Staphylococcus warneri, Staphylococcus hominis, Staphylococcus epidermidis, Streptococcus viridans, Streptococcus mitis*
[c]*CoNS, Staphylococcus warneri, Staphylococcus epidermidis*

BABY COMFORT PROGRAMME PILOT: EXPERIENCES OF MEDICAL STUDENT VOLUNTEERS AND NURSES

V Tsang[1], **C Thompson[1]**, L Bradfield[1], S Vaughan[1], A Buckley[1], J Pando-Kelly[2], PM Filan[1]
[1]Department of Neonatology, Cork University Maternity Hospital, Cork, Ireland
[2], University College Cork School of Medicine, Cork, Ireland

Aims: The Baby Comfort Programme enrolled fourth and final year University College Cork medical student volunteers to hold babies, which contributed to the developmentally nurturing environment in the neonatal unit. Volunteers attended the unit for weekly, two-hour session over eight weeks. This study aims to evaluate the volunteers' and neonatal nurses' experiences of the programme.

Methods: At the end of the programme, the volunteers and nurses completed an anonymous questionnaire, which consisted of multiple choice, five point Likert scale and free text questions. The questions explored personal experiences, and opinions on the role and structure of the programme.

Results: 10 of 10 volunteers responded. 8 were fourth year students. 8 were female. All volunteers rated their overall experience as either very positive or positive, and would volunteer for the programme again. The experience of contributing to the care of the babies and developing confidence in handling babies were valued most by the volunteers. Improved understanding of neonatal medicine was viewed as less important. 9/10 volunteers indicated that the weekly, two-hour shifts worked well. All volunteers felt that the eight-week duration of the programme was ideal or suggested it be longer. During the programme, the volunteers' developed greater confidence, sense of purpose and a stronger relationship with the neonatal staff.

28 nurses completed the questionnaire. 18/28 supervised volunteers directly at some point in the programme. 15/28 believed the programme was helpful or very helpful. All nurses believed that it was appropriate for the volunteers to hold babies in their arms or provide containment care. However, opinions varied regarding bottle or nasogastric feeding, changing diapers and winding babies. 19/28 were in favor of continuing the programme.

Conclusions: The Baby Comfort Programme involving medical students as volunteers provided a positive learning experience for them and was supported by the neonatal nurses.

CHILDREN WITH ISOLATED SWALLOWING DIFFICULTIES- A REVIEW OF PRESENTATION, TREATMENT AND OUTCOMES

J Trayer[1], C Gilmore[2], S Dellape[2], D Cox[1]
[1]Respiratory Department, Our Lady's Children's Hospital Crumlin, Dublin, Ireland
[2]Speech and Language Depatment, Our Lady's Children's Hospital Crumlin, Dublin, Ireland

Aims: To assess the presentation, radiological findings, treatment and outcomes of children found to have an isolated swallowing difficulty.

Methods: Retrospective chart review of children presenting with respiratory symptoms related to swallowing difficulty who were referred for videofluoroscopy (VFSS) under Speech and Language Therapy (SLT). All children with underlying conditions predisposing them to aspiration were excluded.

Results: We identified 17 children with an isolated swallowing disorder over the past 10 years. The mean age at first VFSS was 19.4 (range 0.5-72) months. The most common respiratory symptoms were recurrent respiratory illnesses (82%) followed by wheeze (70%) and coughing with feeds (53%). A significant number of patients were also failing to thrive (41%). On clinical assessment only 18% were noted to be overtly aspirating. On VFSS, 35% demonstrated a delay in swallow, 71% demonstrated aspiration, 29% showed penetration and were felt to be at high risk for aspiration. Abnormal CXRs were noted in 53% of patients, 66% of these later normalised. A CT thorax was performed in 29% of patients, within this group 20% showed bronchiectasis. Nasogastric feeding was required in 47% of patients, of which 75% were referred for gastrostomy insertion. 24% were treated with prophylactic azithromycin and thickened fluids, while 29% were treated with thickened fluids alone. Currently, 70% of patients have unresolved symptoms and an abnormal VFSS and 6% have no symptoms but still have an abnormal VFSS. Only 24% currently have no symptoms and a normal VFSS (mean time to normal VFSS: 10.3 months, range 4-23).

Conclusions: There is a small population of otherwise normal children who have swallowing difficulties leading to significant respiratory morbidity. There is often a delay in diagnosing these children, most likely due to lack of awareness. An isolated dysphagia should be included in the differential diagnosis of children presenting with recurrent, otherwise unexplained respiratory symptoms.

AUDIT OF NEONATAL ALERT FORMS IN NICU SLIGO UNIVERSITY HOSPITAL

Bhargavi Tummaluru, Dara Gallagher, Sligo University Hospital, Sligo

Aim: Genetic factors, maternal illness, multiple pregnancies, infections and certain drugs increase the risk for the foetus. Neonates at risk should be identified as early as possible prenatally or after birth to decrease the neonatal morbidity and mortality. Comprehensive newborn assessment is essential for the diagnosis, counselling on the aetiology, prognosis and recurrence risk in future pregnancies. Coordinated communication is essential between Obstetrics and Paediatrics.
We aimed to classify and determine foetal risk factors reported and to determine whether postnatal plan was recommended in each case.

Methods: Neonatal alert forms sent by Obstetricians in SUH to NICU SUH between July 2014 to June 2015 were audited retrospectively. Name of mother, obstetrician, paediatrician, date of referral, gestational age, and indication for referral and postnatal plan were all recorded and analysed.

Results: Total number of Deliveries :1394.Total number of Admissions to NICU:331.Total number of Neonatal alerts: 202.Endocrine problems 72 (35.64%).Maternal Diabetes: 46 (22.77%).On Diet:14 (6.93%).On Medications:14 (6.93%).On Insulin:17 (8.41%).Maternal hypothyroidism on Thyroxine:24(11.88%).Maternal hyperthyroidism:2 (1%).Renal problems: 38(18.81%).Renal pelviectasis:32(15.84%).Hydronephrosis gross: 4 (1.98%).Multicystic Kidney disease:1 (0.5%).Renal agenesis:1(0.5%).Cardiac problems: 21 (10.39%).Ectopic foci on left ventricle:11(5.44%).Single umbilical artery:5(2.47%).Premature atrial contractions:2 (1%).Foetal arrhythmias:1(0.5%).CNS problems: 8(3.96%).Maternal Medications (non endocrine) 25(12.37%).GBS/PROM 8 (3.96%). Genetic/Chromosomal Syndromes: 4(1.98%).Haematological 5 (2.47%).Metabolic problems 2(1%).Miscellaneous 15 (7.42%).
Postnatal planning recorded in 192.

Conclusions: Foetal risk was identified in 202 patients (14.5%).Main risk factors clearly identified and postnatal plan was documented in 95% of cases.

The most common reason for risk reporting was a Maternal Endocrine problem (35.64%) with IDDM being the most common subgroup (22.77%).

Renal anomalies are the second commonest risk reported (18.81%) with pelviectasis constituting 15.84%
Recommondations: Aim for 100% documentation of postnatal plan on risk forms. Tick box proforma would avoid difficulties with legibility, aid in future data collection and simplify and encourage completion of risk form

A REVIEW OF THE MANAGEMENT OF DCT POSITIVE INFANTS IN A TERTIARY NEONATAL CENTRE

D Vincent[1], J Kelleher[1]
[1]Neonatology, Coombe Women and Infants Hospital, Dublin, Ireland

Aims: The aim of this review was to assess management of direct coombe's test (DCT) positive infants in the early post natal period at a tertiary neonatal centre. Currently, there is no formal policy on monitoring DCT positive neonates in our unit and management varies widely between different maternity centres.

Methods: A retrospective chart review was performed on all DCT positive infants born in our neonatal centre in 2015. Infants with major congenital anomalies were excluded. Basic demographics, presence of jaundice, phototherapy, immunoglobulin requirement, haemoglobin follow up and need for transfusion were assessed.

Results: 109 DCT positive newborn infants with a mean gestational age of 39.2 weeks and weight of 3.32kg were included. A total of thirty one (28.4%) patients required phototherapy prior to discharge. Eighty one (74.3%) infants were followed up at 2 week for haemoglobin checks. Only two of our patients required postnatal blood transfusion. Both of these patients mothers were induced for high antibody levels antenatally.

Conclusion: To date, there has been a lack of consensus on the management and follow up of DCT positive infants in our hospital. It is recognised that significant inter-hospital variation is also present with regards monitoring this cohort of patients. Our study suggests that only high risk infants (infants born to mothers with high antibody levels) require follow up at 2 weeks although larger studies will be required if we are to implement this strategy into a national guideline.

AUDIT OF INTRAVENOUS FLUID USE IN A NEONATAL UNIT IN NORTHERN UGANDA

A Walsh[1]

[1]Department of Paediatrics, Gulu Regional Referral Hospital, Gulu, Uganda

Aims

To audit intravenous (IV) fluid use in the first 24 hours of admission to the neonatal unit.

Methods

Patient charts were reviewed and the relevant information extracted. The results were entered into Microsoft Excel. The use of IV fluids was compared to national guidelines. Fluid guidelines for the unit were drawn up and staff education was performed. A re-audit was performed three months later.

Results

In the initial audit 24/34 (70%) babies got IV fluids during their first 24 hours of admission. All got 10% dextrose. Seven (29%) babies got a one off bolus of 10ml of 10% dextrose on admission. Seven (29%) were on IV fluids only and 17 (70%) were also breastfeeding. None (0%) of the babies who were not breastfeeding received their daily requirement of IV fluids. On re-audit 3 months later 17/24 (70%) babies got IV fluids during their first 24 hours of admission. None (0%) got a one off bolus. All got 10% dextrose. Six (35%) were on IV fluids only and 11 (64%) were also breastfeeding. Two (33%) of the six babies who were not breastfeeding received their daily requirement of IV fluids.

Conclusion

Introduction of IV fluid guidelines and staff education can improve IV fluid use. In a setting where IV infusions are not possible and staffing numbers are low this impact is limited.

PES PLANUS IN DOWN SYNDROME: PROBLEM PATHOLOGY OR SPECIAL FEET FOR SPECIAL CHILDREN

AM Walsh

[1]Discipline of Podiatric Medicine, NUI Galway, Galway, Ireland

Aims: Down Syndrome (DS) is a chromosomal anomaly caused by an error in cell division that results in the presence of an additional third chromosome 21 or "trisomy 21." This extra genetic material results in a recognisable pattern of developmental, learning and physical disabilities which affect individuals in different ways. The estimated incidence of Down Syndrome is between 1 in 1,000 to 1 in 1,100 live births worldwide' (WHO, 2015). In Ireland approximately 1 in every 550 live births is affected by Down's syndrome (HSE, 2015).

The presence of the extra chromosomal material is thought to lead to disruption of normal embryogenesis, and subsequent development. The condition is associated with a variety of co-morbidities and musculoskeletal problems: Pes Planus (flat feet) is the most commonly recognised lower limb problem in people with DS with a reported prevalence of 60-90% (Aprin et al, 1985; Galli et al, 2007).

Methods: Pes planus, despite its high prevalence appears to be either not rated as a problem or under recognised. Possibly due to having no standard approach to screening, assessing or classifying the degree of pes planus nor does there appear to be any standardised care pathways with inclusion of foot screening. There is also much subjectivity as to the required treatment for the condition.

Results: The focus of this study builds upon a national study that focused on the exploration of Downs Arthropathy in a paediatric population in Ireland. From which a subsection of lower limb and foot data highlighted the high prevalence of pes planus and disparity of treatment.

Conclusions: This PhD study aims to establish clear classification criteria of pes planus in paediatric Down Syndrome, develop a clinical screening tool specific for the lower limb and foot and potentially formulate a clinical care pathway for effective management of pes planus in paediatric Down Syndrome.

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3-METHYLGLUTACONIC ACIDURIA WITH CATARACTS, NEUROLOGIC INVOLVEMENT AND NEUTROPENIA (MEGCANN) – A NOVEL IRISH CASE REPORT.

A Walsh[1], PE Fitzsimons[2], PD Mayne[2], E Crushell[3], D Rea[4], JA Mayr[5], S Wortmann[6], B Lynch[7], A Green[8], J Kelleher[1]

[1]Neonatology, Coombe Women and Infant's University Hospital, Dublin, [2]Clinical Biochemistry, Temple Street Children's University Hospital, Dublin, [3]National Centre for Inherited Metabolic Diseases, Temple Street Children's University Hospital, Dublin, [4]Paediatric Radiology, Our Lady's Children's Hospital, Dublin, [5]Paediatrics, Paracelsus Medical University, Salzburg, Austria, [6]Paediatrics, Salzburger Landeskliniken (SALK), Salzburg, Austria, [7]Paediatric Neurology, Temple Street Children's University Hospital, Dublin, [8]Clinical Genetics, Our Lady's Children's Hospital, Dublin

Introduction: We present a male infant born to consanguineous parents from the Irish Traveller population whose clinical course presented a rare disorder diagnosed for the first time in Ireland. This prompted a review of historic cases to determine if it had presented in the past.

Background: Microcephaly, hypertonia and petechiae were noted at delivery and he was intubated for respiratory failure. Blood results showed profound neutropenia and coagulopathy. His hypertonia progressed to spasticity and contractures with microspherophakia seen on ophthalmology assessment. An EEG demonstrated severe, global cerebral dysfunction and MRI Brain revealed immature pattern of gyri, loss of white matter volume and high CSF lactate. Urine organic acids (UOA) showed elevated 3-methylglutaconic aciduria (3-MGA-uria).This presentation was suggestive of the severe neonatal MEGCANN phenotype and he died shortly afterward (1). Genetic results confirmed a novel mutation c.1424G>A,p.(Arg5475GIn) in exon 13 of the CLPB gene, the gene found to be affected in reported cases of MEGCANN (1) (3).

Discussion: MEGCANN has been reported worldwide in various ethnicities. It is very rare with a heterogeneous phenotype and neonatal cases have been universally fatal (2). We know of >80 autosomal recessive (AR) conditions in the Irish Traveller population but have not knowingly encountered this condition before. Whilst this is the first diagnosed case in Ireland a subsequent retrospective review of UOA analyses performed on neonates <4 weeks old highlighted two cases of unexplained deaths (siblings) that had features of MEGCANN with raised 3-MGA-uria and neutropenia.

Conclusion: This is the first known diagnosis of MEGCANN in Ireland. Reviewing past cases where 3-MGA-uria and neutropenia simultaneously occurred two likely historic diagnoses have since been identified.

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HUMIDIFIED HIGH FLOW NASAL CANNULA OXYGEN THERAPY IN ACUTE VIRAL BRONCHIOLITIS - A NEW GUIDELINE AND A REVIEW OF IT'S USE

A Walsh[1], D Cox[1]
[1]Our Lady's Children's Hospital Crumlin, Dublin 12

Aims: Given the recent popularity of Humidified High Flow Nasal Cannula (HHFNC) therapy and its' ubiquitous presence on hospital wards during the bronchiolitis season we decided to formulate a standard guideline for its commencement and use in treating acute viral bronchiolitis. Following its use over the bronchiolitis season we surveyed various healthcare professionals from the Dublin Paediatric hospitals to ascertain their opinion of the guideline and whether or not it had provided appropriate guidance.

Methods: Available evidence as to the efficacy and safety of HHFNC in Paediatrics was reviewed and with the help of other subspecialties across the three hospitals a guideline was formed via the Crumlin Clinical Guidelines Committee. This was introduced into practice in November 2015 after extensive review and teaching. In April 2016 we circulated an anonymous survey to various Healthcare professionals to ask their opinion of the guideline and to obtain feedback for improvement.

Results: There were 56 survey respondents. Of these 34% were Consultants, 29% were NCHDs, 21% were CNM/CNSs, 7% were Staff Nurses and 5% were Allied Health Professionals. 80% of respondents knew about the guideline and 72% felt that the guideline was easily accessible. 70% felt that the guideline has helped them in the use of HHFNC for acute viral bronchiolitis. 18% said that they had noted adverse effects with difficulties of transporting a patient on HHFNC and subsequent deterioration being the main issue noted. 27% felt that they had encountered obstacles to commencing HHFNC on the wards and again transport as well as inaccessibility of certain wards being highlighted as issues.

Conclusions: There has been overall very positive feedback about the introduction of the guideline and it's practical use providing a structured support for staff using HHFNC. Some limitations have been highlighted and these will be reviewed in the coming months.

AN AUDIT OF THE MANAGEMENT OF VITAMIN D DEFICIENCY IN CHILDREN WITH HIV

O Walsh[1], S Duignan[1,2], M Worrall[1,2], P Gavin[1,2], K Butler[1,2]
[1]The Infectious Diseases Department, Children's University Hospital Temple Street, Dublin, Ireland
[2]The Infectious Diseases Department, Our Lady's Children's Hospital Crumlin, Dublin, Ireland

Aims:
The impact of lifelong HIV infection and prolonged antiretroviral therapy (ART) on bone health for youth is unknown. Low bone mineral density (BMD) is common in perinatally infected youth. Low vitamin D increases risk for low BMD and is associated with increased HIV disease severity and death. This audit aimed to assess compliance with vitamin D management standards with key targets of 100% autumnal vitamin D screening and appropriate therapy.

Methods:
A retrospective review was performed of laboratory and pharmacy records of HIV-infected youth attending the Rainbow Clinic, Children's University Hospital Temple Street & Our Lady's Children's Hospital Crumlin, in 2009. Following this The Children's HIV Association Guidelines on Vitamin D Management were implemented and the data re-collected in 2015.

Results:
In 2009, 27% had sufficient vitamin D levels (>50nmol/L), whilst 58% were insufficient (<50 nmol/L) and 15% deficient(<25 nmol/L). In 2015 57% met the target of autumnal vitamin D levels, whilst 98% were screened at some stage during the year. Despite this, 62% were insufficient, with 20% of them not receiving treatment during the period of review. There had been a significant reduction to 9% of those with deficient levels, whilst those with normal levels remained constant.

Conclusion:
Children with vitamin D deficiency are now being diagnosed and treated successfully, however despite appropriate supplementation prescribing the prevalence of insufficiency remains high. Therefore elimination of delays between diagnosis and treatment, and re-evaluation of our mode of delivery of maintenance vitamin D is required to address this.

IS ROUTINE ECHOCARDIOGRAPHY WARRANTED IN INFANTS ADMITTED WITH TRANSIENT TACHYPNOEA OF THE NEW BORN AND A PROLONGED HOSPITAL STAY

N Walsh[1], C Breathnach[1], A El-Khuffash[1], O Franklin[2], D Corcoran[1]
[1]Department of Neonatology , The Rotunda Hospital, Dublin, Ireland
[2]Department of Cardiology, Our Lady's Children's Hospital Crumlin,, Dublin , Ireland

Background and Aim: In the era of antenatal screening for congenital heart disease (CHD), infants presenting with an undiagnosed cyanotic CHD in the early neonatal period is rare. However, infants admitted with an initial diagnosis of transient tachypnoea of the newborn (TTN) and a prolonged hospital stay often undergo an echocardiogram. We aimed to assess whether this practise yields any additional cases of undiagnosed CHD.

Methods: This was a retrospective review over a three year period (2013 – 2015) of all term infants admitted with an initial diagnosis of TTN, had a hospital stay of ≥5 days and underwent an echocardiogram. The presence of CHD on the echocardiogram was assessed.

Results: 47 infants with a median [IQR] gestation and birthweight of 39.3 [38.3 – 40.4] weeks and 3.5 [3.2 – 3.9] Kg and underwent an echocardiogram (on day 4 [2 – 8] of age) were identified. All infants had a normal antenatal anomaly scan. None of the infants had a diagnosis of cyanotic or ductal-dependent CHD on the postnatal echocardiogram. Six infants had a diagnosis of pulmonary hypertension. Their echocardiogram occurred on day 1 [0 – 3] of age; 4 were invasively ventilated at the time and two had an oxygen requirement > 50%. A small muscular ventricular septal defect was identified in two infants.

Conclusion: Routine echocardiography for infants admitted with TTN with a prolonged hospital stay to rule out cyanotic CHD should not be carried out. A more selective approach to echocardiography in this population is warranted.

THE MANAGEMENT OF FIRST PRESENTATION AFEBRILE SEIZURES IN THE EMERGENCY DEPARTMENT: SHOULD ALL PATIENTS GET AN EEG?

N Walsh[1], I Okafor[1], N Kandamany[1], R Mc Namara[1]
[1]Emergency Department, Temple Street Children's University Hospital, Dublin 1

Aim: First afebrile seizures are a common presentation to the Emergency Department (ED). Current practice in the ED in Temple Street Children University Hospital is that all children presenting with a first afebrile seizure and who are well can be discharged home after a period of observation but should have an outpatient electroencephalogram (EEG) and follow up in review clinic. Unfortunately, there is no clear national guideline and internationally guidelines vary. The aim of this study therefore was to assess diagnostic yield of performing EEGs in the outpatient setting in patients with first afebrile seizures presenting to the ED.

Method: Patients presenting with a first afebrile seizure to the ED that were discharged home were included in this study between September 2014-November 2015. Patients were identified using the E-audit tool on the ED Symphony System. A data extraction proforma was used to document presentation of seizure and follow up/referral for EEG.

Results: Sixty-eight patients presented to the ED with first afebrile seizure over the study period. 86% were referred for EEG as an outpatient. 50.9% of those EEGs performed and reported were normal with no follow up. 49% were reported as abnormal. 92% patients with abnormal EEGs were diagnosed with epilepsy with 88% of those started on antiepileptic medications.

Conclusion: It appears that outpatient EEGs would be efficacious as part of the management of first presentation of afebrile seizures of the ED based on these results, however a guideline is needed regarding appropriate follow up for these patients.

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THE USE OF "HYPOPACKS" IN PAEDIATRIC PATIENTS PRESENTING WITH HYPOGLYCAEMIA IN THE EMERGENCY DEPARTMENT IN UCHG

N Walsh[1], C Diskin[1], D Griffin[2], E Moylett[1]
[1]Academic Department of Paediatrics, National University of Ireland Galway
[2]Department of Biochemistry, University Hospital Galway

Aim: Current practice in UCHG is that a hypoglycaemia workup is performed if presenting bedside blood glucose measurement (BM) is less than or equal to 2.6mmol (< 2.6 mmol) without consideration of clinical scenario or reference to true blood glucose.
We evaluated our current clinical practice and considered it with reference to available literature and practice amongst other Paediatric Centres in Ireland.

Method: We identified episodes of hypoglycaemia investigated in paediatric patients carried out in the Emergency Department over a 15-month period (Jan 2014-March 2015 inclusive) using records provided by the Biochemistry Department.
We adopted a protocol used by tertiary paediatric centres as a guide to assess efficacy, recommending hypoglycaemia work up should be performed if BM <2.6 in child aged less than 1 year or less than 2.2 in children over one year. In cases where it is indicated, blood is taken and processed if criteria are met on true blood glucose measurement. If, ketosis and clear history of prolonged poor oral intake work up, clinical decision may be to not proceed with investigations.

Results WeIdentified 33 cases where hypoglycaemia work ups were performed in the Emergency Department during study period. No underlying diagnosis was made during the period. We found that 42% (n=14) were indicated as they met one or more of the criteria above. The remaining 58% (n=19) did not meet such criteria. Adenovirus or Rotavirus was identified in 48% (n=16). 2 patients required repeat investigations, as initially abnormal, repeat was normal.

Conclusion We would recommend that hypoglycaemia work up is undertaken if presenting BM is less than or equal to 2.6 mmol /l. The work up will proceed based on the true blood glucose and with Senior Clinical input. A new paediatric protocol has been devised with a plan to introduce same in June 2015 and reaudit in 2016.

A DOSE-INTERVAL STUDY OF A DUAL PROBIOTIC PREPARATION IN PRETERM INFANTS.

C Watkins[1, 5], K Murphy[1, 5], E M Dempsey[3, 4], C A O' Shea[4], P W O' Toole[3, 4], R P Ross[2, 5], C Stanton[1, 2], C A Ryan[3, 4]

[1]Food Research Centre, Teagasc Moorepark , Fermoy, Co. Cork , [2]APC Microbiome Institute , University College Cork , Cork , [3]Department of Paediatric and Child Health, Cork University Maternity Hospital, Cork, [4]Department of Neonatology, Cork University Maternity Hospital, Cork, [5]Department of Microbiology , University College Cork, Cork

Background Recent studies have examined the efficacy of probiotics to treat and prevent the onset of necrotising entercolitis in pre-term infants. However, many of these studies have yet to establish an appropriate dosage for this type of treatment.

Objective To investigate the appropriate dosing interval of a dual probiotic in pre-term infants at risk for necrotizing enterocolitis.

Method: Stool samples were collected from 3 groups of preterm infants who received daily, biweekly and weekly doses of a dual probiotic (Infloran) containing *Bifidobacterium bifidum* (10^9 CFU/250mg tablet) and *Lactobacillus acidophilus* (10^9 CFU/250mg tablet), prior to the introduction of infloran into the clincial setting. DNA was extracted from these stool samples at week 1, 34, 41 and 44 weeks post birth.

Result A total of 42 infants were recruited and 90 stool samples collected in the present study, 12 of which were enrolled from a previously established cohort, InfantMet, as a control group. After first administration of the probiotic at day 7 (week1), significantly higher levels of Proteobacteria were found in the daily (8.6%) and biweekly (9.3%) groups in comparison to the weekly group (0.01%) and at genus level, *Bifidobacterium* were significantly higher in the daily group (44.5%) in comparison with the biweekly (16.8%) and weekly (8.8%) groups, respectively. At 34 weeks post birth significantly higher levels of *Bifidobacterium* were found in the daily (59.6%) group in comparison with the biweekly (21.4%), weekly (22.9%) and control (14.7%) groups. Interestingly at 44 weeks corrected gestational age significantly higher levels of *Lactobacillus* were found in the biweekly group (16.5%) by comparison to the weekly group (2.1%).

Conclusion Our results indicate that a daily dose of Infloran is the most suitable dosing regime for pre-term infants in the NICU, with significantly higher levels of *Bifidobacterium* found in the daily probiotic group when compared to the biweekly, weekly and control groups.

AUDIT ON DELAY OF RETRO-TRANSFER OF BABIES IN A TERTIARY NEONATAL UNIT IN IRELAND

JL Wong, A Ryan, N McCallion, Rotunda Hospital, Dublin

Background: Approximately 100 babies are transferred to a tertiary unit for specialist and intensive care annually.Most babies will require a step down level 2 or level 1 neonatal care prior to discharge. These infants are then transferred back to the referring hospital. The proposed model of care for neonatal service in Ireland, published in 2015, recommended the need for efficient and effective retro-transfer services to minimise 'bed-blocking' situation in tertiary hospitals.

Aims: The purpose of this study is to determine the factors associated with delay to retro-transfer of babies in a tertiary neonatal unit in Ireland.

Audit standard: Model of care of Neonatal Service in Ireland 2015

Methods: Study samples were identified from 2 databases (National Neonatal Transport Program and HIPE databases). A retrospective chart review was carried out on all the retro-transfers in year 2015.

Results: There are 39 neonatal cots in the unit. 61 babies were identified from NNTP. However, HIPE database only documented 49 discharges in 2015. 29 babies were included in this study. 41% (n=12) had a delay in retro-transfer ranging from 1 – 9 days involving 8 hospitals. The occupancy in the unit was between 22 to 40 neonates with an average number of nursing staff of 9 to 12 per shift. There was a total of 54 days delay in retro-transfer. The delay were due to bed shortages in the receiving hospital (n=9), staff refusal to accept baby due to baby's status (n=1), shortage of nursing staff to collect baby who did not meet the neonatal transport service criteria (n=1) and insufficient nursing staff in receiving hospital (n=1).There were more than 80% occupancy in the unit in 34 days (63%) of retro-transfer delay.

Conclusion: The most common reason for delay in retro-transfer is due to bed shortages in the receiving unit. Resource allocation should be evaluated to ensure a more effective and efficient retro-transfer services.

SPECIALIZED INVESTIGATIONS (EEG & NEUROIMAGING) IN CHILDREN PRESENTING WITH AFEBRILE SEIZURES : AN AUDIT TO ASSESS COMLIANCE WITH NICE GUIDELINES

E Yousaf, M K Munir, F Yasin, A A Khan, S Condon, R Khan, Paediatrics, UHK, Tralee, Co Kerry

Aims:
To compare specialized investigations in children with afebrile seizures with internationally recognised standards in a university-affiliated general paediatric unit.

Method:
Retrospective review of all afebrile seizures presenting to paediatric emergency department in 2014, assessed against standards derived from 2012 Epilepsy NICE Guidelines. Data was analysed using excel sheet.

Results:
Total 87 patients presented to KGH paediatric emergency department with seizures. 47 cases were excluded due to the fact that seizures were associated with fever. 27 out of 40 children (67.5%) with afebrile seizures had EEG. 14 (35%) had MRI brain. 17 (42.5) had CT brain.

Conclusion:
This unit is generally compliant with international guidelines on specialized investigations of afebrile seizures. Improvements can be made by minimizing the unnecessary use of CT brain.

GASTRO-OESPHAGEAL REFLUX IN NEURO-IMPAIRED CHILDREN

Taha I Yousif1, N Thapar2, K Lindley2, O Borrelli2, M Mutalib2
1.Gastroenterology Dept, Royal Victoria Infirmary, Newcastle, U.K.
2.Gastroentrology Dept, Great Ormond Street Hospital, London, U.K

In a previous study by this group of authors we found that current used cut off values are actually higher than what should be used. We conducted this research to evaluate the normal values of MII-pH in children less than16 years of age with and without neurological and respiratory symptoms. These include acid exposure percentage via pH and impedance and number of acid and non-acid reflux episodes.
Methods: Results of patients less than 16 years referred to Great Ormond Street Hospital Gastroenterology unit for assessment of GORD 92008-2014) were obtained from the electronic database. We excluded patients with any risk factor for GORD to calculate the normal values.
Results: Out of 1183 patients 113 patients' reports were studied as the neurological-abnormal population. As the data distribution for all variables were skewed we used the median and interquartile ranges. We compared children with underlying neurological abnormality with those with normal neurology. We found difference between the two groups in percentage of total acid exposure (21 vs 18) but not on the total acid (41 vs 39) and the differences in the number of episodes more than 5 mins (2.3 Vs 0) respectively. When comparing those with respiratory symptoms with normal children we found no significant differences between the two groups when comparing total acid and total reflux episodes.
Conclusion: This study showed No significant differences in pH-Impedance values between those with and without neurological symptoms**.** To our knowledge this is the largest data available on MII-pH in children. This study is limited by the nature of the population used although every effort was made to normalise the population of interest. We would recommend larger study on normal children to establish whether we should lower currently used values, this however will be faced by ethical dilemma in accepting normal children to be tested.
Disclosure of interest:
None Declared.

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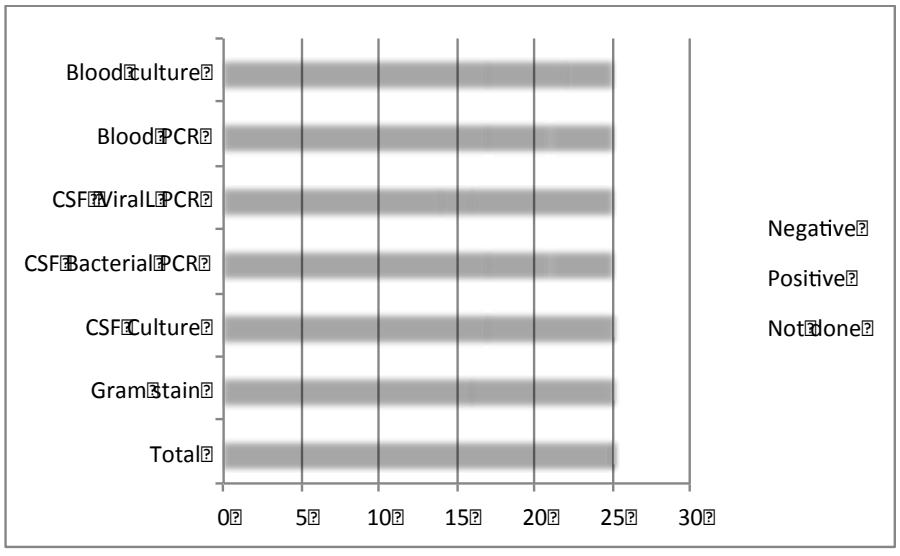
CSF-PCR is a valuable test, but are we doing it?

Dr. Taha I Yousif, Dr. Katie O'Reilly, Dr. Montasser Nadeem
Paediatric department,Tallaght Hospital, Dublin

Aim: The aim of this audit is to review the current practice in investigating CSF in children. In particular we reviewed the use of the PCR test in CSF in suspected cases of meningitis.
Methods: Children treated for bacterial and viral meneingitis over five years (2011-2016) period were identified from the hospital database. Using the hospital lab software, we reviewed all tests performed for these children.
Results:
25 patients had lumbar puncture (LP) for suspected bacterial or viral meningitis over 5 years period;11 of these patient had confirmed bacterial meningitis. The mean [range] age was 18 [0.5-192] months and the mean [range] length of hospital stay (LOS) was 12.6, [4-28] days. All patients had blood tests including FBC and CRP. CSF WCC diferential was not performed in one patient. The total WCC in CSF of this patient was 5 cells/mm. Of 25 patients, CSF Cultures were performed in 25 (100%), blood cultures in 23 (92%), CSF-bacterial PCR in 21 (84%), CSF-viral PCR in 16 (64%) and blood PCR in 21 (84%) patients. CSF- Gram stain was examined in all patients, of whome 9 had postive Gram stain. Of 25 patients, 8 had positive CSF Culture, 4 experienced positive CSF bacterial PCR samples. Blood bacterial- PCR was tested positive in 4 patients out of 21. Blood culture was positive in 5 of 22 samples.
Discussion:
Clinical Guidelines recommend that CSF Should be sent for Bacterial and/or viral PCR whenever obtained for the purpose of diagnosing bacterial or viral meningitis. Our study showed that in general we make the most possible use of CSF. However CSF samples were not examined by PCR assays for bacteria in 4 of 25 (16%) patients and for viruses in 9 of 25 (36%).
Recommendation: CSF is a valuable test that should be used appropriately to get the maximum diagnostic yield. All CSF samples should be sent for cell count, Gram stain, culture and sensitivity and PCR assays.
Table 1: showing the distribution and results of CSF Analysis in 25 patients



NEONATAL TRANSPORTS TO AND FROM CORK UNIVERSITY MATERNITY HOSPITAL IN 2014

Z Yusuf[1], L O'Connell[1]
[1]Neonatology, Cork University Maternity Hospital, Cork, Republic of Ireland

Background:
The National Neonatal Transport Programme (NNTP) transfers premature babies requiring specialist hospital care. This service is provided by the main three Dublin maternity hospitals. A significant number of the transports involve Cork University Maternity Hospital (CUMH), a tertiary neonatal referral centre. We reviewed the neonatal transports to and from CUMH in order to explore if a neonatal transport service for the Southern area and supra regional areas would be beneficial.

Results
We identified 99 neonatal transfers to and from CUMH in 2014. Fourty-five of the transports were conducted by the NNTP, 48 of the transports were conducted by local transport services, one transport was conducted by Karolinska University, and one transport was conducted by Sabah Hospital. Four transports were not clarified. Most transports occurred on a weekday. Babies transported by the NNTP were more premature (33^{+1}/40 weeks versus 35/40 weeks), younger at transport (36^{+5}/40 weeks versus 38^{+5}/40 weeks), smaller (2499 grams versus 2918 grams), and required more respiratory support than babies transferred by local services. The majority of transports were for gastrointestinal surgical input, neurosurgical input, ENT input, and cardiology input. Transports by the NNTP involved a medical registrar and a nurse, while most of the local transports involved a nurse. The time to the departing centre after contacting the transport service was 267.5 minutes if the NNTP was contacted, and 163.5 minutes if local transport was contacted.

Conclusion
Ninety-nine neonatal transfers took place to and from CUMH in 2014. Fifteen percent (45/300) of transports by the NNTP involve CUMH. Babies transported by the NNTP generally require more support than babies transported by local transport services. Considering the time waiting for a transport team from Dublin, and the number of transports involving CUMH, it may be worth exploring if CUMH can run a neonatal transport service for the Southern area and supra regional areas.

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CARDIOFACIOCUTANEOUS SYNDROME IN A SIBLING PAIR - A NOVEL MODE OF INHERITANCE CASE AND LITERAURE REVIEW

S ZAHRADNIK[1], R BARRY[2]
[1]SCHOOL OF MEDICINE, UNIVERSITY COLLEGE CORK, CORK, IRELAND
[2]DEPARTMENT OF PAEDIATRICS, MERCY UNIVERSITY HOSPITAL, CORK, IRELAND

Aims

We report a case of a sibling pair with Cardiofaciocutaneous syndrome (CFC) and unaffected parents. The boys share an identical gene mutation, challenging the accepted aetiology of CFC as an autosomal dominant disorder caused by a **spontaneous** germline mutation in a gene of the Ras/MAPK pathway (BRAF, MAP2K1, MAP2K2, or KRAS).
CFC is a rare syndrome characterized by cardiac abnormalities, distinctive craniofacial appearance, cutaneous abnormalities, and developmental delay in all affected individuals (Rauen 2007).
We aim to describe the similarities and differences in clinical presentations of these siblings, and explore their inheritance with relation to their parents and unaffected siblings.

Methods

A retrospective review of the clinical records of both siblings was performed that collected information regarding patient demographics, presenting symptoms, laboratory findings, and clinical management. Information was also collected regarding the siblings' parents and unaffected siblings.
Clinical course and presentations of the siblings were compared with the literature on CFC and similar developmental syndromes caused by different mutations in the Ras/MAPK pathway, such as Noonan Syndrome and Costello Syndrome. As a group these are referred to as RASopathies (Tidyman and Rauen 2009).
Focus was made on methods of inheritance in relation to the results of genetic and other clinical testing of the family.

Results

Reports in the literature of sibling pairs with CFC and unaffected parents are extremely rare, although we did find one describing siblings with disparate spontaneous mutations (Søvik *et al.* 2007).
The sibling pair we describe shares the same mutation in BRAF, the gene most commonly implicated in CFC (~75% of cases). The likelihood of these mutations both being spontaneous is near zero.

Conclusion

The genetic findings in this sibling pair with CFC and unaffected parents are the first description of gonadal mosaicism as the most likely aetiology of CFC in a sibling pair. This will aid in diagnostics in paediatrics and genetics.

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SLEEP PROBLEMS IN CHILDREN WITH CEREBRAL PALSY AND NEONATAL ENCEPHALOPATHY

Z.Zareen[1,2], D.McDonald[1], E.J.Molloy[1,2]
[1.] Adelaide and Meath Hospital Dublin incorporating The National Children's Hospital, Tallaght, Dublin, [2]Trinity College Dublin, Ireland

Aim

Sleep disturbances are commonly seen in children with Cerebral palsy. Our aim was to assess sleep pattern of children with cerebral palsy (CP) in comparison to children with normal development and children with mild learning difficulty who had Neonatal encephalopathy (NE), using validated sleep questionnaire; Child Sleep Habit Questionnaire (CSHQ).

Methods

We compared 3 groups: children with moderate/severe CP, children who had neonatal encephalopathy and normal controls. Sleep pattern of 20 children with diagnosis of CP, pre-school and school aged (mean age 10.4 years) were compared with the sleep pattern of 45 children with normal development and intelligence (mean age 7.2 years) and with 20 children who had neonatal encephalopathy (NE) and normal development or mild learning difficulty (mean age 4.5 years).

Results

The majority of children with CP (71%) and NE (53%) in our study had a pathological total sleep score, ($p = 0.001$) and ($p= 0.02$) respectively in comparison with 5% of children in the general population. Children with CP had sleep disordered breathing (SDB) (71%) more parasomnias (72%), and excessive daytime sleepiness (EDS) in 62.5% compared to children with normal development. However, we found that pre-school children with normal development and children with NE, have increased prevalence of problems including bed time resistance (46 %,) and sleep anxiety (50%) compared to school age controls.

Conclusions

We found high incidence of sleep problem in children with Cerebral Palsy in both pre-school and school age groups compared to the sleep pattern of children with normal development.

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