

Reducing Invasive Screening for Group B Streptococcus (GBS) in Asymptomatic Term Neonates

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*In Response to Article Entitled 'The Neonatal Early Onset Sepsis Calculator; In Clinical Practice'
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We read with interest the paper by Loughlin et al on the neonatal early onset sepsis calculator¹. Neonatal sepsis remains a major concern worldwide with Group B Streptococcus (GBS) reported as the main causative agent of early onset of the disease. Despite establishing screening for GBS sepsis, it remains difficult to identify which infant will develop invasive GBS disease due to low incidence of the disease even among neonates whom their mothers were colonized with GBS. All symptomatic and many asymptomatic newborns with risk factors for early onset sepsis (EOS) in Rotunda Hospital were traditionally screened and treated prophylactically with antibiotics. A recent study conducted by Kuzniewicz et al. validated the use of neonatal EOS calculator in safely minimizing number of septic screens among neonates with possible GBS sepsis². Therefore, this quality improvement audit was conducted to review how many septic screens could be avoided among asymptomatic term neonates using this newly validated EOS calculator as the standard of care.

A retrospective review of electronic medical records was conducted on neonates born in Rotunda Hospital over the period of January to May 2019. A random sample of over 215 neonates was selected from the computerized hospital database and all term asymptomatic neonates from this cohort were included in this study (n=173). Mean age of the 173 neonates was 38 weeks. The results of blood cultures taken from neonates in this population were all negative of GBS. Forty-three neonates (24.8%) were born to GBS positive mothers and 75 neonates (43.3%) born to mothers with GBS status unknown. About half (52%) of the study population were born to mothers who had antibiotics coverage of less than 2 hours. Maternal intrapartum fever (52.0%) was the commonest risk for GBS sepsis among this cohort and only one neonate (0.6%) was identified with sibling who had invasive GBS disease.

Based on septic risk scores demonstrated by the EOS calculator, only 9 neonates (5.2%) would require blood cultures and none of the neonates in this study would require empiric antibiotics. This indicates an overall reduction of 164 blood culture tests (94.8%) and 173 cases of antibiotics administration in this group of asymptomatic term neonates if EOS calculator were to be integrated into standard care. Although all infants would not be indicated for empiric antibiotics according to the practice projected using the EOS calculator, one neonate who had older sibling with invasive GBS would automatically receive empiric antibiotics as a protective measure.

We agree that integration of the EOS calculator into standard care would provide a safe system for determining which infant should undergo screening in a targeted manner, in which not all asymptomatic neonates with maternal risk would require septic screens. Unnecessary use of antibiotics among neonates could also be largely prevented, hence,

minimising the risk of developing antimicrobial resistance at an early age. Reduction of septic screens among neonates with low risk of developing sepsis could potentially reduce early separation of neonates from mothers as well as the workload intensity of the neonatal unit. This warrants implementation of a change in practice with ongoing review of the impact at a national level.

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