

Consideration of Tetanus Prophylaxis in an Infant Born Out of Hospital

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Dear Sir,

In January an infant was born on the streets in Dublin. In a first world country this is not something we have great experience of and prompted discussion about how this would be approached. The initial stabilisation steps would naturally follow along the Neonatal Resuscitation Programme and the approach to management of a case where maternal serology or medical history is unknown. However, this is still within a clean hospital setting. 'What about Tetanus?' was the question asked, which we could not immediately answer.

Tetanus is caused by spores of the bacterium *Clostridium tetani*. The spores, which can survive for years, are found everywhere in the environment, particularly in soil, intestinal tracts/faeces of animals and humans, and on the surfaces of skin and rusty tools¹. Maternal and Neonatal Tetanus (MNT) has been among the most common life-threatening consequences of unclean deliveries and umbilical cord care practices². When tetanus develops, mortality rates are extremely high, especially when appropriate medical care is not available, as is often the case in low income countries². In countries where national programmes have maintained high immunization coverage for several decades, tetanus incidence rates are very low¹.

The disease remains an important public health problem especially in low-income countries or districts, where immunization coverage is low, and unclean birth practices are common. In 2015, approximately 34 000 newborns died worldwide from neonatal tetanus¹. It can be prevented by immunizing women of reproductive age with tetanus-toxoid-containing vaccines (TTCV), either during pregnancy or outside of pregnancy in addition to robust medical practices. The vaccine against tetanus was introduced into the Irish vaccination schedule during the 1930's. Between 2000-2015 twelve cases of tetanus were reported in Ireland with 2 deaths. The majority of these cases were >20 years of age¹. There are no documented reports of neonatal tetanus available in Ireland thus far.

In this scenario we have a baby of uncertain gestation born to a mother with unknown medical and immunization status, delivered in an environment putting the baby at risk of acquiring tetanus. Although HSE recommendation is not neonatal specific, it states that Prophylaxis with TIG is recommended for those with tetanus-prone wounds who are not immunised or unknown vaccine status and /or immunocompromised, even if fully immunised³. In this case the infant was observed in NICU pending serology status and clarification sought in relation to implement used to cut umbilical cord.

The case was discussed with the Infectious Diseases team who advised Hep B vaccination for the child, to hold TIG prophylaxis and observe for 7 days. The infant was discharged to foster care after two weeks in the unit, is thriving and meeting developmental milestones.

Some of our team have worked in resource poor regions and had experience of such cases whereby such an infant would receive prophylaxis and demonstrated the value of our diverse teams with their cumulative experience from different countries, especially in the developing world. Evidence-based guidance for such scenario is not readily available. We suggest the care for such infants should include in hospital observation for at least 7 days, vigilant history taking and maternal immune status inquiry, relevant serology screening and wound / umbilical swabs and fastidious umbilical stump care. Consideration should be given to prophylaxis with human tetanus immune globulin (TIG) and discussion with Infectious Diseases. We also propose that the national immunisation guidelines could include recommendations for the neonate at high risk of tetanus neonatorum.

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