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Title: Neonatal patients with melioidosis: A systematic review

Abstract:

Melioidosis is a rare but neglected tropical disease with high mortality rates, particularly among neonates. Despite this, current approaches to melioidosis diagnosis and treatment are based on adult studies, with limited research into paediatric cases. Here, we conducted a systematic review exploring the clinical characteristics of culture-confirmed melioidosis in neonates. Web of Science, WHO Global Index, Scopus and Ovid databases were searched up to July 2023. Data extracted included age, sex, clinical presentation, treatment, mortality, and risk factors. Quality assessment was performed using the ROBIS risk of bias in systematic reviews tool. 50 cases were identified across 24 publications. Cases commonly occurred in the early neonatal period and had a high mortality (>75%), often despite early access to intensive care. Mortality was not linked to prematurity or birth weight. The only survivors were among those who received the recommended antibiotics for Melioidosis. The most common clinical presentations were sepsis, pneumonia and meningitis. There were no instances of parotitis, which can be prevalent amongst older children. Due to the rapid disease progression >65% of fatal cases received a positive culture diagnosis after death. The median time to death was 4 days. The small number of cases in this review demonstrates the need for further work to characterise the course and risk factors of melioidosis in neonates. Our findings suggest, however, that Melioidosis is under-reported in neonates. In endemic areas, greater awareness is needed amongst clinicians of neonatal melioidosis and of the high levels of antibiotic resistance associated with this pathogen.

Biography

Dr Edwardes completed a degree in Aeronautical & Astronautical Engineering with a Masters in Space Engineering in 2013. After serving as an Engineering Officer for 6 years in the Royal Air Force, she completed a Medical Degree at the University of Oxford in 2023. During the pandemic she worked as the project manager for OxVent, leading a multidisciplinary team of engineers and medics developing emergency use ventilators for the UK Government. She has published 4 papers in the fields of Medicine and Space Engineering.