

**PA-105 AETIOLOGY, ANTIBIOTIC RESISTANCE AND RISK FACTORS FOR NEONATAL SEPSIS IN A LARGE REFERRAL CENTRE IN ZAMBIA**

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**Background** In sub-Saharan Africa there is scanty data on the causes of neonatal sepsis and antimicrobial resistance among common invasive pathogens, which might guide policy and practice.

**Methods** This was a cross-sectional observational prevalence and aetiology study of neonates with suspected sepsis admitted to the neonatal intensive care unit, University Teaching Hospital, Lusaka, Zambia, between October 2013 and May 2014. Data from blood cultures and phenotypic antibiotic susceptibility testing were compared with multivariate analysis of risk factors for neonatal sepsis.

**Results** Of 313 neonates with suspected sepsis, 54% (170/313) were male; 20% (62/313) were born to HIV-positive mothers; 33% (103/313) had positive blood cultures, of which 85% (88/103) were early onset sepsis (EOS). *Klebsiella* species was the most prevalent isolate, accounting for 75% (77/103) of cases, followed by coagulase-negative staphylococci (6% (7/103)), *Staphylococcus aureus* (6% (6/103)), *Escherichia coli* (5% (5/103)) and *Candida* species (5% (5/103)). For *Klebsiella* species, antibiotic resistance ranged from 96–99% for WHO-recommended first-line therapy (gentamicin and ampicillin/penicillin) to 94–97% for third generation cephalosporins. The prevalence of culture-confirmed sepsis increased from 0–39% from December 2013 to March 2014, during which time mortality increased 29–47%. 93% (14/15) neonates with late onset sepsis and 82% (37/45) with early-onset sepsis aged 4–7 days were admitted >2 days prior to onset of symptoms. Culture results for only 25% (26/103) of cases were available before discharge or death. Maternal HIV infection was associated with a reduced risk of neonatal sepsis (OR 0.46 [0.23–0.93],  $p=0.029$ ).

**Conclusions** Outbreaks of nosocomial multi-antibiotic-resistant infections are an important cause of neonatal sepsis and associated mortality. Reduced risk of neonatal sepsis associated with maternal HIV infection is counterintuitive and requires further investigation.