

ABSTRACT

Neonatal deaths remain high globally, particularly in sub-Saharan Africa. A third of deaths are due to infections, often secondary to multi-drug resistant (MDR) organisms. The purpose of this study was to investigate the prevalence of MDR ESKAPE+ *C. auris* colonisation amongst hospitalised neonates, to determine risk factors associated with MDR colonisation, and perform antimicrobial resistance characterization of these isolates. Two hundred and fifty-eight swabs were collected from 86 hospitalised neonates at a tertiary South African hospital between November and December 2020. A total of 135 ESKAPE+ *C. auris* isolates were identified; 68% were MDR. Majority of neonates (65%) were colonised with extended spectrum betalactamase (ESBL) producing *Klebsiella pneumoniae*, followed by extensively-drug resistant (XDR) *Acinetobacter baumannii*. New Delhi metallo-beta-lactamase (NDM) producing *A. baumannii* were more prevalent than carbapenemase producing Enterobacterales (CPE). A prolonged hospital stay, median=14 days ($p<.001$), was identified as a risk factor for MDR organism colonisation. The high prevalence of MDR ESKAPE+ *C. auris* colonisation supports use of non-invasive samples to determine colonisation prevalence. More data are needed to develop improved surveillance systems which should incorporate colonisation swabs and clinical biomarkers in neonates with independently established risk factors.