

## Abstract

**Background:** Preterm labour is the leading cause of neonatal morbidity and mortality due to the resulting prematurity. Urogenital bacterial colonization commonly precedes preterm labour and contributes up to 33% of preterm deliveries. Bacterial isolates and their antibiotic susceptibility patterns change from time to time with increasing resistance to commonly prescribed antibiotics. This study aimed at determining the prevalence, antibiotic susceptibility and factors associated with urogenital bacterial colonization among women with preterm labour.

**Methods:** A cross-sectional study was conducted and consecutively enrolled 156 women with preterm labour at the maternity ward of Mbarara Regional Referral Hospital from November 2022 to April 2023. An interviewer guided structured questionnaire was administered to obtain data on independent variables. Urine samples, endocervical and high vaginal swabs were taken and subjected to culture and antibiotic susceptibility tests. We used Modified Poisson regression analysis to determine the factors associated with bacterial colonization.

**Results:** Out of 156 women with preterm labour enrolled in this study, 85 (54.5%) had urogenital bacterial colonization. The mean age of the participants was 25.5 years. Majority of the participants were married (86.5%), had been referred in (77.8%) and had an abnormal vaginal discharge (75%) prior to the study. The commonest isolated bacteria were *Staphylococcus aureus* (50%), *Klebsiella spp.* (30.2%) and *Enterococcus spp.* (7.5%). These organisms were generally sensitive to Gentamycin, Ciprofloxacin, Ceftazidime and Ceftriaxone while resistant to commonly prescribed antibiotics like Ampicillin and Azithromycin. The factors independently associated with bacterial colonisation included age less than 20 years (aPR 1.66, p-value =0.001) and abnormal vaginal discharge (aPR 1.79, p-value=0.016).

**Conclusion:** The prevalence of urogenital bacterial colonization among women with preterm labour at MRRH is high. The common isolates (*Staphylococcus aureus* and *Klebsiella spp.*) are resistant to the commonly used antibiotics. Women with preterm labour, age less than 20 years and those with abnormal vaginal discharge are likely to have bacterial colonization. We recommend that routine culture and sensitivity be done for all women with preterm labour especially those aged less than 20 years and those with an abnormal vaginal discharge.