

Maternal vaginal colonising bacteria as a surrogate marker for prevalence of antimicrobial resistance in the Eastern region of Sri Lanka

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Introduction and Objectives:

The global spread of antimicrobial resistance (AMR) among commensal flora is a serious threat to community health. However, there is a paucity of data regarding the spread of AMR in the community setting. Antimicrobial susceptibility pattern of vaginal microbiota of pregnant women represents the community prevalence of antimicrobial resistance. This study was conducted to identify the vaginal colonisation rates and antibiotic susceptibility pattern of potentially pathogenic and clinically important AMR bacteria among women in labour in the Eastern region of Sri Lanka.

Method: A total of 216 high vaginal swabs (HVS) were collected on admission from women in labour who presented with dribbling and were admitted for delivery at Teaching Hospital, Batticaloa from November 2021 to August 2022. All the samples were cultured on Blood agar, MacConkey agar, and Chocolate agar and incubated aerobically for 18-24 hours at 35±2 °C. Culture isolates of group B streptococci (GBS), coliforms, and *Staphylococcus aureus* were further investigated for antibiotic susceptibility to commonly used antibiotics, inducible clindamycin resistance, production of extended-spectrum β-lactamase (ESBL) and methicillin resistance respectively (CLSI, 2020).


Results: A total of 224 isolates were recovered, including 27 (12.5%) GBS, 23 (10.6%) coliforms and 10 (4.6%) *S. aureus*. All GBS isolates were 100% sensitive to penicillin and ampicillin but had reduced susceptibility to erythromycin (37%). Four isolates of coliforms (17.6%) were identified as ESBL producers, showing resistance to 3rd and 4th generation cephalosporins. None of the coliforms showed resistance to carbapenems or amikacin. Four of the 10 *S. aureus* isolates were identified as MRSA while 7 were susceptible to clindamycin and only four were susceptible to erythromycin. All 10 isolates were susceptible to cotrimoxazole and fusidic acid.

Conclusion: Presence of ESBL-producing coliforms which showed resistance to 3rd and 4th generation cephalosporins, and the presence of MRSA indicate the importance of applying measures to control the development and spread of AMR in the community. Further studies with higher number of samples will give better information on this important issue.

Keywords: Vaginal colonization, antimicrobial resistance, High vaginal swabs, Pregnant women

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