

Relationship between Antimicrobial Resistance to Bacteria in the Vagina and Rectum of Pregnant Women and Early Neonatal Sepsis

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Abstract

Background and Objective: Neonatal sepsis is a remarkable factor in mortality, morbidity, neonatal and perinatal complications. *Group B Streptococcus (GBS)* is the primary cause of invasive disease in infants and pregnant women. This study aimed to determine the relationship between antimicrobial resistance of the bacteria colonized in the vagina and rectum of pregnant women and early neonatal infection.

Material and Methods: In this prospective study conducted on 282 pregnant women, bacterial sensitivity to ampicillin, cefazolin, erythromycin, vancomycin, gentamicin, amikacin was measured. Furthermore, the relationship between rectal and vaginal colonization of mothers and early neonatal sepsis was evaluated.

Results: Of 98 positive rectal cultures, 49 (50%) were *Gram-positive cocci* and 49 (50%) *E.coli*. of 143 positive vaginal cultures, 136 (95.1%) were *Gram-positive cocci*, 7 (4.9%) were *E.coli* and two were positive *GBS*. We could find definitive neonatal sepsis. Significant correlation was found between a history of urinary tract infection and the mother's positive rectal culture ($P=0.03$).

Conclusion: Clinical sepsis in neonates is correlated with positive rectal culture ($P=0.001$) and the positive *E.coli* vaginal cultures is associated with suspected neonatal sepsis ($P=0.007$). *Gram-positive cocci were resistance to ampicillin and gentamicin, and E.coli was resistant to ampicillin, erythromycin and vancomycin.* Because of resistance to ampicillin, we recommend cefazolin due to its sensitivity to organisms and safety in pregnancy.

Keywords: Antibacterial Agents, Escherichia Coli, Gram-Positive Cocci, Newborn, Sepsis