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Impact of Immediate Postnatal Microbial Colonization on Early Onset Mild And Moderate Morbidities in Term Neonates

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Abstract

Objective: In this study the immediate postnatal rectal (RC) and nasopharyngeal colonization (NPC), and their implications in the early onset morbidities in term infants were investigated.

Study design: In a retrospective cohort single center study, nasopharyngeal (NPCx) and rectal (RCx) microbial cultures were obtained within 20 minutes of birth in mild to moderately sick term infants. The clinical implications of the colonization in neonatal clinical course and outcomes were analyzed via multivariate logistic regression analyses.

Results: A total of154 term infants were admitted for respiratory distress, hypoglycemia, maternalchorioamnionitis (CHO) and suspected neonatal sepsis, out of which80(52%) were NPCx-positive. The duration of rupture of membrane (ROM) was higher (15.5+10 vs. 11.3 +11 hours, p=0.02) while the respiratory support requirement (15% vs. 35.1%, p =0.01) and occurrence of maternal GBS colonization lower (16.3% vs. 29.7%, p=0.04) in NPCx-positive infants. ROM increased (OR1.04, 95% CI 1.01-1.07), and maternal GBS colonization decreased the likelihood of having positive NP cultures (OR 0.31, 95% CI 0.14-0.72). The major microorganisms isolated were Staphylococcus epidermidis (41%), alpha hemolytic Streptococcus (16%), Escherichia coli (13%), and non-anthrax bacillus (7.5%). Among the enrolled infants, 44 (21.4%) were RCx-positive. The need for (11.4% vs.27.3%, p=0.03) and days on respiratory support (0.2+0.6 vs. 0.8+2.5, p=0.03) were lower and the occurrence of CHO higher (41% vs. 23.2%, p=0.04) in the RCx-positive infants. Cesarean section (CS) was performed less frequently (18.2% vs. 55.5%, p=0.001) and decreased the odds of having positive rectal cultures (OR 0.21, 95% CI 0.96-5.37). Eighty percent of the RCx+ infants isolated E coli, and 6.8% Klebsiella.

Conclusion: Early postnatal NP and rectal colonization decrease the occurrence and severity of respiratory morbidities but not independent of con-current clinical conditions in term neonates suffering from mild to moderate morbidities. NPC is supported by ROM and declines by maternal GBS colonization, while CS decreases RC.

Biography:

Dr.Rita P Verma was trained in Pediatrics at the state university of New York Upstate Medical Center, Syracuse, NY and did a fellowship in Neonatal-Perinatal medicine at the University of Illinois Medical Center at Chicago after obtaining a medical degree from the University of Bihar in India. She started her career as an attending neonatologist, associate director of research and assistant professor of Pediatrics at the Hahnemann University School of Medicine, Pennsylvania. She was subsequently appointed as an associate professor of pediatrics at the State University of New York- Stony brook School of Medicine, and at the University of Maryland- Baltimore School of Medicine, where she served as an attending neonatologist, director of the neonatology follow – up program and associate director of the neonatology fellowship program. Currently, she is serving as the director of Neonatal Perinatal medicine, director of pediatrics research and professor of Pediatrics at the Nassau University Medical Center, East Meadow NY. She has conducted and directed research in the clinical, as well as basic neonatology, focusing mainly on the vulnerable population of extremely low birth infants, and studying the fluid and electrolytes balance, placental histopathology and hypotension in them.

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