

Multidrug-Resistant, Potentially Pathogenic Organisms in Preterm Mother's Breastmilk, and Neonatal Oral and Rectal Swabs



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Poster no:
ABS 10

INTRODUCTION

- Overuse of antibiotics may lead to the selection of potentially pathogenic multidrug resistant organisms (MDRO)
- Preterm mother-neonate dyads are often exposed to broad spectrum antibiotics
- We studied preterm mother-neonate dyads to determine whether breastmilk and neonatal oral and rectal swabs are colonized with MDR pathogenic bacteria and if this is associated with antibiotic usage

OBJECTIVES

To determine

1. The presence of MDRO in pre-term mother's breast milk and neonatal oral and rectal cavity
2. The association, if any, between MDRO and antibiotic usage

METHODS

Study duration: Aug 2018-April 2021

Setting: Neonatology unit of Dept of Pediatrics and Dept of Obstetrics, PGIMER, Chandigarh

Sample size: 100 mother-infant dyad (28-34 weeks gestation)

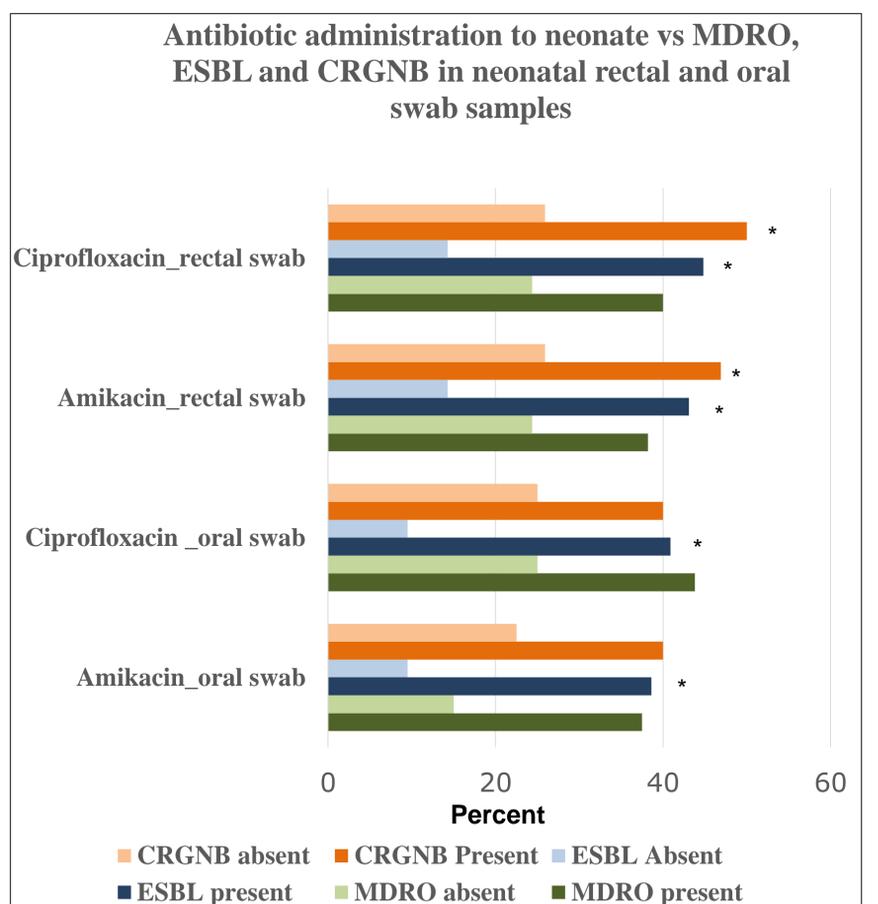
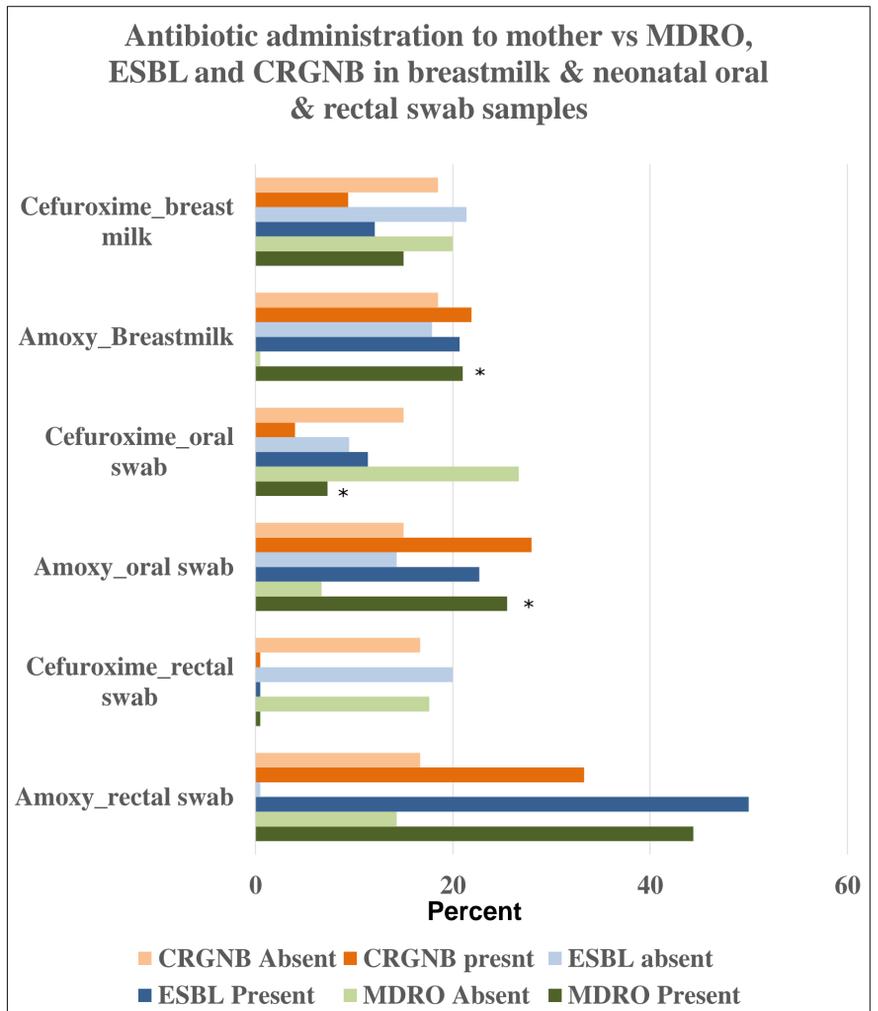
Culture:

- Breastmilk and Neonatal oral and rectal swabs were cultured under stringent aseptic conditions.
- Bacteria grown in these samples were identified using MALDI-TOF, focusing on a panel of 13 neonatal pathogens of interest

Sensitivity: Tested using Vitek2

RESULTS

- MDRO colonisation in:
 - 66% breastmilk samples
 - 71% oral swab samples
 - 83% rectal swab samples
- Mothers received antibiotics in pregnancy
 - 17% Amoxycillin
 - 16% Cefuroxime
- Neonates received antibiotics postnatally
 - 32% Amikacin
 - 33% Ciprofloxacin



DISCUSSION AND CONCLUSIONS

- An alarming proportion of breastmilk, neonatal oral swab and neonatal rectal swab samples are colonised with MDR pathogens
- It may result in neonates getting colonized by resistant pathogenic bacteria, which may result in serious complications in future
- Antibiotic usage is associated with selecting out these bacteria

ACKNOWLEDGEMENT

I thank the funding agency ICMR and DBT for the financial support