

Title of Abstract:

Reducing Risk of Bowel Perforation in Very Preterm Infants

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Abstract Description:

Background: Intestinal perforation is a severe morbidity associated with very high mortality in preterm infants. Multiple risk factors for perforation exist: Including extreme prematurity, hypotension, infection, postnatal steroids, and indomethacin. Early enteral feeding and less antibiotic use are associated with improved gut colonization and reduction in necrotizing enterocolitis (NEC).

Objective: To evaluate the effect of early colostrum, early trophic feeds and maternal and neonatal antibiotic use on risk of spontaneous intestinal perforation (SIP) or perforation due to NEC in very preterm infants.

Methods: This is a single center retrospective study that included very preterm infants (<33 weeks gestation) born and admitted to our Regional NICU, with intent to treat, between Jan 2008 and Dec 2016. Maternal and neonatal characteristics, risk and protective factors, early feeding and antibiotic usage were compared between infants with and without intestinal perforation. We further evaluated factors associated with perforation using multivariate regression analysis adjusting for gestational age (GA).

Results: Ten of the 588 infants had intestinal perforation. GA, lower APGAR scores at 1 and 5 minutes, use of indomethacin, use of postnatal steroids, antibiotic use in the first week of life, early trophic feeds and colostrum were significantly associated with perforation. After adjusting for GA, early colostrum use (8.5 vs 30.2 hours of life, adjusted OR 1.01, 95% CI 1.0, 1.02), early trophic feeds (29.8 vs 119.3 hours of life, aOR 1.01, 95% CI 1.0, 1.01), lower number of days of antibiotics use within first 7 days of life (2 vs 6.5 days, aOR 1.7, 95% CI 1.1, 2.5) were significantly associated with less risk of perforation. Postnatal steroids use (aOR 10, 95% CI 1.8, 55.6) was

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significantly associated with higher risk of perforation. Maternal characteristics and other neonatal risk factors were not associated with risk perforation.

Conclusion: In our single center experience, early administration of colostrum, early initiation of trophic feeds and lower use of antibiotics are significantly associated with lowered risk of perforation in very low preterm infants. This finding needs to be validated with larger multi-center studies.

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