

FAILED MEDICAL MANAGEMENT VERSUS IMMEDIATE SURGICAL INTERVENTION FOR NECROTISING ENTEROCOLITIS: A POPULATION BASED CASE CONTROL STUDY

Gina Itzikowitz¹, Benjamin Allin¹, Amit Gupta², Kokila Lakhoo^{3*}, Marian Knight^{1*}

¹National Perinatal Epidemiology Unit

² Oxford University Hospitals NHS Trust, Neonatal Intensive Care Unit

³ Oxford University Hospitals NHS Trust, Department of Paediatric Surgery

*These authors contributed equally

Aims:

Data from the British Association of Paediatric Surgeons Congenital Anomalies Surveillance System (BAPS-CASS) identified two groups of infants who underwent surgery for NEC, those who required primary surgical intervention, and those who first trialled medical therapy. The aim of this study was to investigate whether there were differences in characteristics and outcomes between these groups of infants.

Methods:

A case-control study was performed on prospectively collected data from all infants deemed to require surgical intervention for NEC in the UK and Ireland between 01/03/2013 and 28/02/2014 (REC Approval 12/SC/0416). Cases were infants who required surgical intervention following failed medical therapy, and controls were those who required primary surgical intervention. Differences in baseline characteristics were investigated between cases and controls, and outcomes at 28 days and one year post-intervention were compared.

Results:

236 infants comprising 82 cases (35%) and 154 controls (65%) met the study inclusion criteria. Median age at surgical intervention was 29 days of life (IQR 11-38 days) for cases, and 8 days of life (IQR 6-18 days) for controls ($p < 0.001$). Following adjustment, cases were significantly less likely to undergo surgery for a suspected perforation (aOR 0.04, 95% CI 0.02-0.08), and significantly more likely to undergo surgery due to identification of a fixed loop of bowel (aOR 7.22, 95% CI 1.92-27.13) than controls. Cases were also significantly more likely to require inotropic support than controls (aOR 2.95, 95% CI 1.4-6.19). There was no difference in gestational age at birth between cases and controls, and no difference in mortality, TPN requirement, or discharge home at either 28 days or one-year post intervention.

Discussion:

These results suggest that although there are two groups of infants who require surgery for NEC at different time-points, and for different indications, that both appear to be drawn from one homogeneous population, with similar outcomes.