NEONATAL NECROTISING ENTEROCOLITIS: THE ROLE OF COW'S MILK PROTEIN

David Burge¹,², Melanie Drewett¹, Nigel Hall¹,²
¹Department of Paediatric Surgery and Urology, Southampton Children's Hospital, Southampton, UK,
²University of Southampton, Southampton, UK

Aims: Anecdotal evidence suggests that necrotising enterocolitis (NEC) is often preceded by a change in feed regime and previous investigators have suggested a reaction to cow's milk protein (CMP) may be involved in NEC pathogenesis. We investigated the relationship between the exposure to feeds containing CMP and the development of surgical NEC in preterm infants.

Methods: A retrospective case-note study was performed of all infants admitted with NEC requiring surgery between January 2007 and September 2015. Infants were excluded if they were not preterm, had a congenital cardiac condition or had previous intestinal pathology. Feeding patterns from birth up to the development of NEC were recorded. Data are median (range)

Results: 55 infants meeting the inclusion criteria developed surgical NEC at 30 (4-61) days. All but 3 infants initially received breast milk (BM) as their initial feed. At diagnosis of NEC 6 infants were receiving BM alone (11%) and the remainder were receiving feeds containing CMP products alone or in combination with BM. In these 49 infants first exposure (or in 2 cases re-exposure) to CMP occurred at 20 (1-54) days and NEC occurred 8 (1-38) days later, within 7 days in 24 (49%) infants (Figure). The 2 infants with re-exposure had received 2 weeks of elemental formula feeding following signs of feed intolerance. Both developed extensive surgical NEC within 2 days of re-exposure to CMP and one died.

Conclusion: In this series half the infants who developed surgical NEC whilst receiving CMP did so within 7 days of first exposure or re-exposure to CMP. These data support the hypothesis that CMP may have a causative role in the development of NEC. The development of CMP-free preterm feeds may help decrease the incidence of NEC.

![Graph showing time from first or re-exposure to CMP feeds to NEC]