

## AN AUDIT OF BILIOUS VOMITING IN TERM NEONATES REFERRED FOR PAEDIATRIC SURGICAL ASSESSMENT: CAN WE REDUCE UNNECESSARY TRANSFERS?

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**Aim of the Study:** In published series, 27-51% neonates with bilious vomiting have surgical pathology. Distinguishing neonates requiring surgery remains challenging. Locally, our neonatal transfers have increased because of interventions aimed at encouraging referral. Our aim was to conduct an audit of term neonates with bilious vomiting referred for surgical assessment to identify patient characteristics, outcomes and management. The secondary aim was to identify factors predictive of surgical diagnosis, specifically malrotation/volvulus, to rationalise neonatal transfers.

**Methods:** Infants <28 days referred to surgeons for bilious vomiting from 01/2011-12/2015 were identified through cross-referencing of transport, radiology, neonatal and operative databases. Data obtained included clinical features, laboratory, radiological investigations and management. t-tests / Mann-Whitney U tests were performed on parametric and non-parametric data respectively. Regression analysis was conducted to identify predictors of surgical diagnoses, specifically malrotation/volvulus.

**Results:** 351 eligible neonates were referred to surgeons during the study period [45.9% female; mean gestation 39+6 days (SD 9.2 days); mean birthweight 3469g (SD 558g)]. Blood gas, biochemical and haematological results were available for 68.7%; 88.9% underwent X-ray and 96.6% contrast studies. A surgical diagnosis was reached in 11.7% [malrotation +/- volvulus 4.6% (1.7% with volvulus)]. No laboratory results were statistically different between neonates with or without malrotation, however these neonates more frequently had abdominal distension (mean diff -3.25; CI -0.6160, -0.0343; P=0.031) and abnormal X-ray findings (mean diff -0.295; CI -0.57, -0.02; p=0.0372). Whilst these were included in final regression modeling, no test accurately exclude neonates with malrotation.

**Conclusion:** Only 11.7% neonates had surgical pathology, less than in previous studies. Currently, over 200 emergency neonatal transfers take place to identify a single case of volvulus. Whilst abdominal distension and abnormal X-rays were more frequent amongst neonates with malrotation, no pre-contrast test accurately excludes this diagnosis to avoid transfer. A better, widely available test is needed.