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PREDICTORS OF INTESTINAL FAILURE AND OUTCOME FOLLOWING NECROTIZING ENTEROCOLITIS

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Background and aim: Necrotizing enterocolitis (NEC) is the most common serious, acquired gastrointestinal (GI) disorder affecting newborns. The aim of this study was to identify predictors of intestinal failure (IF) following NEC.

Design/methods: Retrospective study of all neonates treated for NEC Stage II or greater, between 2000 and 2009 at the Hospital for Sick Children, Toronto, a tertiary referral NICU covering 65,000 births per year. Need for surgery, residual bowel length and rates of IF, defined as need for parenteral nutrition > 42 days after NEC and other outcomes were examined.

Results: In the 10 year period, 301 patients were treated for NEC. 71 (23%) died within 42 days of NEC diagnosis. In infants surviving >42 days 97/230 (42%) developed IF. There was a significant relationship between IF and gram negative bacteremia, cholestasis, liver failure and mortality. In the infants requiring surgery, mortality was highest in the peritoneal drain group (67%) compared to 34 % in the laparotomy group.

Conclusions: IF developed in 42% of infants following NEC and was fatal in 21/97 (22%). Predictors for IF are low birth weight, low gestational age, gram negative bacteremia, and need for surgical intervention.

	Medical NEC n=148	Surgical NEC n=153	P value	Odds Ratio [95% CI]
BW g, mean +/- SD	1512 +/- 797	1290 +/- 712	0.01	
GA w, mean +/- SD	30.6 +/- 4.1	28.8 +/- 4.0	0.0002	
Intestinal Failure (%)	37 (24%)	62 (40%)	0.004	1.25[2.04, 3.35]
Mortality (%)	28 (19%)	68 (44%)	<0.001	2.04[3.45, 5.77]

[Table 1]