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**Faecal Calprotectin (FC) as a Diagnostic Marker to Predict Necrotizing Enterocolitis (NEC) In Preterm Neonates**

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**Abstract:**

**Background and Aims:** FC is a biomarker of gut inflammation in ulcerative colitis and Crohn's disease. This study utilizes FC in preterm neonates progressing to NEC.

**Methods:** Prospective diagnostic test done from Jan 2010 to May 2011 on paired stool samples of 102 preterm neonates below 36 weeks gestation born in Kempegowda Institute of Medical Sciences Bangalore and tested at Population Health and Research Institute Trivandrum by Quantum Blue Rapid Calprotectin Assay. Pilot study assessed cut-offs in 30 term neonates. Socio-demographic, maternal details, antenatal steroids, gestational age; neonatal symptoms and Modified Bell's staging for NEC on Days 3 and 7 of admission noted. Septic screen and radiology tools were done. Data analyzed by univariate and logistic regression for primary outcome- Suspected/probable/definite NEC. Secondary outcomes: surgery, adverse events of NEC/death within 28 days. ROC curves, diagnostic test evaluation were carried out.

**Results:** 22 and 11 neonates had Modified Bell's staging =1a on days 3 and 7 respectively; 15 had NEC as outcome. ROC curve with  $>279 \mu\text{g/g}$ . AUC was 0.652 (95% CI 0.516 to 0.789). Day 3 FC levels were high in 65.7%. Sensitivity 93.3%; Specificity 39%; Positive predictive value 20.8% and Negative predictive value 97.14%. Significant variables in logistic regression model: Stay =20 days; multiple symptoms; mechanical ventilation and FC  $=279 \mu\text{g/g}$ .

**Conclusion:** FC is a useful adjunct to the existing methods to diagnose NEC.