Background and Aims  Preterm neonates have lower anti oxidant defense system and repeated blood transfusion may further increase the oxidative stress specially in sick preterm neonates. The aim was to assess the effect of blood transfusion on lipid peroxidation product Malondialdehyde (MDA) in sick neonates.

Methods This was an exploratory study in a Level III neonatal unit in which 50 consecutive sick neonates of ≤34-weeks gestation were enrolled who received blood transfusion till day 28. Primary outcomes were

1. Pre and post transfusion blood and Urine MDA and 2. Pre transfusion SOD and Catalase. Secondary outcome was Pretransfusion MDA and antioxidant enzymes in various neonatal morbidities.

Results  The mean birth weight and gestational age were 1416±219 grams and 29.9±2.5 weeks respectively. The pre transfusion blood and urine MDA were 4.2±1.2 nmol/ml and 6.9±3.7 nmol/ml respectively. These levels increased significantly from baseline after each transfusion. Base line MDA was higher (p=0.052) and SOD (p=0.02) and Catalase (p=0.00) were significantly lower in babies < 30 weeks gestation.

Pre transfusion Blood MDA levels were significantly higher (p=0.00) in the babies who had IVH and BFD while urine MDA was significantly high in BFD babies. SOD and Catalase levels were significantly (p=0.00) lower in babies who developed BFD.

Conclusion  Baseline oxidant levels are higher and anti-oxidant enzymes are in lower in < 30 weeks gestation babies and in those who developed BFD and IVH. Blood transfusion further increases lipid peroxidation products.

Conclusion  In contrast to neonatal practitioners, mothers strongly preferred an indomethacin prophylactic strategy in the management of preterm infants.

1316  DIAGNOSTIC ROLE OF CALPROTECTIN IN NEWBORNS

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Introduction  Calprotectin is a member of the S100 protein family binding calcium-and zinc and has been demonstrated as one of the most sensitive marker of the intestinal inflammation. It is secreted into the faeces by neutrophil granulocytes and can non-invasively be monitored neonatal infectious disease.

Background and Aims  Determining the physiological age-related changes of calprotectin level in faeces and describing the measured values in pathological conditions. Exploring the influential factors of the calprotectin concentration and establishing a reference value regarding neonatal intestinal diseases.

Methods  106 stool samples were collected from 66 newborn (51/15: mature/prefmature) in the University of Pécs followed by calprotectin determination performed by ELISA. Throughout the study, the calprotectin content of the normal meconium was monitored and data were processed retrospectively.

Results  The faecal calprotectin concentration of mature infants is many times higher than the literature indicated four year reference value. This biomarker level showed typical changes during the first week of life (median: 286.94 ug/g). Lower calprotectin levels were found in infants whose physiological weight loss had stopped in the first three days. Furthermore, changes in calprotectin level occurred later after caesarean section than after vaginal delivery and higher concentrations were found in infants after breast-feeding compared to formula-feeding. Moreover, high calprotectin levels (646.2 and 1243.2 ug/g) had been detected before manifestation of symptoms in two lethal necrotizing enterocolitis associated cases.

Conclusions  Determination of faecal calprotectin is considered as a useful prognostic biomarker in premature infants showing symptoms, such as intestinal distress or general infection.