



Abstract PO-0578 Figure 1

Objective To assess the impact of phototherapy as the risk factor on the reduction of serum globulin in neonatal hyperbilirubinemia.

Methods Total of 430 full term infants aged at 1–28 days diagnosed with neonatal hyperbilirubinemia was enrolled in this study. Intrauterine infection, genetic abnormal and congenital diseases was excluded. All newborns received single-side phototherapy (halogen lamps for 12 h per day, 3 days) or plus intravenous albumin (1 g/kg.d, two days) or plus intravenous immunoglobulin (1 g/kg.d, two days). The total serum bilirubin (TSB), albumin (ALB) and globulin (GLB) levels were detected twice at the first day and fourth day of hospitalisation respectively.

Results TSB concentrations decreased from $299.6 \pm 83.9 \mu\text{mol}$ to $163.6 \pm 57.6 \mu\text{mol/L}$ after three days intensive treatment ($p < 0.001$). Pearson correlative analysis shows that TSB is significant correlated to GLB level ($r = 0.245$, $p < 0.01$) and not related to ALB. There was a significant reduction of GLB levels in each age groups after treatment ($p < 0.001$). The GLB concentrations decreased 2–4 g/L (10–20% compared to their basic levels) and dramatically decreases in groups of >7 days of birth age ($p < 0.001$). The reductions of GLB level were from $21.3 \pm 4.1 \text{ g/L}$ to $18.5 \pm 4.2 \text{ g/L}$ in phototherapy group, and $23.0 \pm 3.9 \text{ g/L}$ to $16.6 \pm 4.5 \text{ g/L}$ in phototherapy plus IVALB ($p < 0.001$). The effect of phototherapy on reduction of GLB levels was correlated to the ages of birth.

Conclusions These results demonstrated that phototherapy accelerates serum globulin clearance which implies infants facing to the risk of immunity injure, especially in age over 16 days, while additional IVALB aggravated the reduction along with the ages.

Neonatal Infections

PO-0578a EPIDEMIOLOGY AND ANTIBIOTIC SUSCEPTIBILITY OF GRAM-NEGATIVE (GN) NEONATAL INFECTIONS OVER 10 YEARS: DATA FROM THE NEONIN INFECTION SURVEILLANCE NETWORK (WWW.NEONIN.ORG.UK)

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Background and aims Gram-negative sepsis is associated with high morbidity and mortality in neonates and necessitates prompt treatment with appropriate antibiotics. This study focused on the epidemiology and antibiotic susceptibility of GN pathogens over the last 10 years using data from a neonatal infection network.

Methods neonIN is an international web-based surveillance database which captures culture proven neonatal infections. Data for UK neonatal-units (NNUs) on GN infection episodes between April 2004 and May 2014 were extracted. Late-onset sepsis (LOS) was defined as an episode occurring from 48-hours after birth.

Results There were 605 episodes from 28 NNUs (involving 540 neonates). Overall incidence was 0.87/1000 live-births and 7.10/1000 NNU-admissions. LOS accounted for the majority of all GN episodes (532, 87.9%) and was associated with an earlier gestation-age than early-onset sepsis (median 26 vs 30 weeks, $p < 0.001$). *E. coli* was the commonest pathogen (217, 35.9%) followed by *Klebsiella* sp. (120, 19.8%) and *Enterobacter* sp. (102, 16.9%). The pathogens were predominately isolated from blood (544, 89.9%). 74 (12.2%) episodes were treated as meningitis with no significant difference in meningitis rates between pathogens. Resistance data were available for 342 (56.5%) episodes. Resistance to 3rd-generation cephalosporins was 19.7% (36/183), to aminoglycosides 9.9% (29/291) and to quinolones 13.1% (23/175).

Conclusion GN infections represent a significant burden of infection in the hospitalised neonate. Rates of 3rd-generation cephalosporin resistance pose a challenge for their use as empiric therapy. Ongoing surveillance of antibiotic susceptibility is necessary to ensure optimal antibiotic practice.

On behalf of the Neonatal Infection Surveillance Network (neonIN).

Neonatal Nutrition and Gastroenterology

PO-0579 RISK FACTORS FOR IRON DEFICIENCY AND IRON DEFICIENCY ANAEMIA IN LATE PRETERM INFANTS AT THE AGE OF 6 WEEKS

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Background and aims Iron deficiency (ID) has long-term detrimental effects on neurodevelopment. Preterm infants are at risk for developing ID or iron deficiency anaemia (IDA) during the first weeks of life. The aim of this study was to identify early risk factors during hospitalisation for a deprived iron status in late preterm infants at the age of 6 weeks.

Methods We analysed the iron status of 99 infants born between 32 and 35 weeks of gestational age from March 2011 to May 2013 in three non-tertiary hospitals in the Netherlands. ID and IDA at the age of 6 weeks were defined as a ferritin concentration $<70 \mu\text{g/L}$ and the combination of a haemoglobin level $<110 \text{ mg/dL}$ and ID, respectively.