for genital mycoplasmas (GM) and complete blood counts within 24 hrs. of birth. Infants with GM+ve were compared with GM-ve for perinatal and neonatal variables.

Results

Of the 361 infants with tracheal aspirate cultures sent for GM, 50 positive were GM+ve (See Table). Infants GM+ve had significantly higher platelet counts compared to those GM-ve (285 ± 177 vs. 196 ± 83; p = 0.007). After controlling for perinatal variables (GA ≤32 wk., prematurity of membranes, birth weight, delivery mode, prenatal antibiotics and prenatal steroid) in GM+ve the adjusted odds ratio for an initial platelet count of > 25,000 was 3.83 (95% CI 1.5–9.8) with p value of 0.0049. However, GM+ve infants had no significant changes in other haematological parameters such as total WBC counts, neutrophil, monocyte, lymphocyte or eosinophil counts.

Conclusions

Vertical transmission of GM to the infant is manifested subtly at birth without significant changes in haematological parameters except an increase in platelet count > 250 K.

Significance

Increase in platelet counts at birth may be an important marker for the effects of GM on premature newborn infants.

PS-301 CONDITIONS OF INTESTINAL COLONISATION IN PRETERM INFANTS DURING THE FIRST MONTH OF LIFE

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Aim

to describe intestinal microbiota in preterm infants admitted to the Neonatal Unit using molecular techniques, and assess the impact of different conditions.

Methods

Two year period Descriptive study (2011–2012) of gut microbiota in stools from newborns born under 35 week gestational age (WGA) at birth, admitted in a Neonatal Care Unit. Stool samples were collected: M1 (meconium), M2 (first week), M3 (first month). 5 groups of bacteria were analysed using qPCR technique: Bacteroides, Bifidobacterium, Escherichia coli, Clostridiums and Lactobacillus. Maternal, perinatal and neonatal variables were registered. Statistic programs SPSSv20.

Results

In the first month a marked increase (x120) in Bifidobacterium is observed. The increase of Lactobacillus (x2) and E. coli (x7) is lower. Bacteroides and Clostridium remain stable.

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Background and aims Device-related infections are thought to be initiated by adhesion of the bacteria to a medical device, followed by colonisation and mature biofilm formation. Preterm infants are susceptible to device-related infections caused by Staphylococcus epidermidis. Also, preterm infants have lower levels of antimicrobial peptides, including human cathelicidin antimicrobial peptide LL37, a condition that in part may explain their increased vulnerability. Our aim was to evaluate the effect of peptide LL37 on 1) the expression of biofilm-associated genes and 2) biofilm mass, by using an in vitro model.

Methods Biofilm formation of S. epidermidis was studied on in vitro vascular catheter pieces and in culture plates, in the absence or presence of LL37. Bacterial biofilm mass was investigated by scanning electron microscopy (SEM). Changes in biofilm-associated gene expression was determined by real-time polymerase chain reaction.

Results Tissue-like concentration of the peptide down-regulated most of the investigated genes after 2 h. A diminished biofilm mass was seen on the catheter surface by SEM after 24 h incubation.

Conclusions Peptide LL37, as part of innate immune defense of the newborn infant is crucial for the regulation of the commensal flora, including Staphylococcus epidermidis. A diminished activity of LL37, as found in preterm infants, may contribute to increase their risk of device-related infections.

Introduction Newborn infants are at risk of vitamin D deficiency and various studies implicate vitamin D as having immunomodulatory effect. Adequate generation of reactive oxygen intermediates (ROI) by neutrophils (PMN) during sepsis is bactericidal. However, production of neutrophil oxidase activity in the presence of sepsis is impaired in neonates.

Aim To examine the in vitro effect of 1, 25(OH)2D3 on whole blood PMN and monocyte ROI, TLR4, CD11b in newborn infants during sepsis in vitro.

Methods Whole blood from preterm infants <32 weeks gestation within 24 h of birth, cord blood from term infants and adult controls were analysed for phagocytic expression of Toll-Like Receptor 4 (TLR4; pathogen recognition); CD11b (chemotaxis and adhesion) and ROI production (bacterial kill) using flow cytometry. These were assessed in response to Lipopolysaccharide (LPS; Endotoxin; in vitro sepsis) and 1,25(OH)2D3.

Results ROI production from preterm and term neonatal neutrophils incubated with LPS alone was not significantly increased in contrast to adults. However pre-incubation with 1,25 (OH)2D3, before adding LPS demonstrated a significant increase (p = 0.001) in ROI production for both preterm and term infants while simultaneous LPS and 1,25(OH)2D3 had no effect.

Conclusion New born infants were hypo-responsive in the presence of sepsis in vitro which recovered on pre-treatment with 1, 25(OH)2D3. Pre-treatment with vitamin D may improve term and preterm infants’ antibacterial responses.