neonatal infection, it is mentioned in some studies that MSAF is a risk factor for neonatal infection. Knowledge about the types of pathogens is still limited and pathogens is curiosity.

**Objective** Determine pathogens contain in MSAF which lead to neonatal infection in newborn with MSAF.

**Method**

**Cohort study.** **Subjects** newborns with MSAF delivered in RS. Dr. Karadi from October 2009 – March 2010 with inclusion criteria. MSAF was determined by KAPPA test (0.74) and contain one of stool metabolite. Group II was babies with clear amniotic fluid. Examination of variables were taken on the first day. Statistical analysis used chi square, Mann whitney, and relative risk (CI 95%).

**Result** Subjects were 70 babies. Group I: 35 baies and Group II: 35. Babies with MSAF and viscous amniotic fluids have 10 x higher risk to be infected (95%CI=1.3–74.0; p=0.005). Incidence of neonatal infection by Gram staining: Gram (+) has RR 1.4 (95%CI=0.3–6.8; p=0.6) and incidence of both Gram (+) and Gram (-) has RR 2.4 (95%CI=0.7–7.7; p=0.2). RR of babies with MSAF containing E coli culture become sepsiis was 3.8 (95%CI=0.8–17.0; p=0.057) and non E coli culture was 2.4 (95%CI=0.4–13.1; p<0.4).

**Conclusion** E coli was the prominent pathogen in babies with MSAF but not a risk factor. MSAF is the risk factor for neonatal infection.

**INCIDENCE AND ORGANISM PATTERN IN EARLY ONSET NEONATAL SEPSIS**

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**Background and Aim** Early onset neonatal sepsis (EONS) occurs within the first 3 to 7 days of life. The incidence of EONS vary from 1 to 4.6 cases per 1000 live newborns. The distributions of organisms in EONS helps to use appropriate antibiotics prophylaxis during labour and neonates with suspected sepsis. The aim of our study was to compare the incidence and the organizations distribution for EONS during 2009, 2010 and 2011 for infants admitted to NICU in our Neonatal Department.

**Methods** Data were retrieved from newborns with positive bacterial blood and/or cerebral spinal fluid in the first 72 h after birth. We compared incidence rate and causative organisms.

**Results** A total of 198 newborns with suspected sepsis, 125 had positive cultures over the time of three years period. The EONS incidence was 8.1 (54 per 6659 neonates) in 2009, 5.7 (40 per 6994 neonates) in 2010, and 4.5 (31 per 6883 neonates) in 2011. B Streptococcus were the most common organism (3.4/1000) in the term infants. Staphylococcus coagulase-negative was second with rate 2.8/1000. Escherichia coli (3.8/1000) and Staphylococcus coagulase-negative (3.5/1000) were the most common in preterm infants. There were no significant changes in organism pattern in EONS during study period.

**Conclusion** The rate of EONS among neonates in NICU in study period was not significantly changed and we did not find significant change in bacterial organisms. So, we suggest further prevention of EONS focused on prevention of vertical transmission and intrapartum antibiotics prophylaxis.

**IMPACT OF 4% CHLORHEXIDINE CORD CLEANSING OF UMBILICAL CORD ON BACTERIAL GROWTH OF NEWBORNS IN PEMBA, TANZANIA**

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**Introduction** Studies in Nepal, Pakistan, and Bangladesh have shown using 4% CHX solution for umbilical cord cleansing reduces neonatal mortality and malnutrition. Data evaluating the effect of 4% Chlorhexidine umbilical cord cleansing from the Sub-Saharan region is lacking. Considering this need we are undertaking a double blind, controlled study in Eastern Africa. Before starting the trial, in this pilot we tested the impact of 4% Chlorhexidine and control solution specially prepared for the trial in colonization and colony count.

**Methods** Total 512 newborns in both the hospital and community were enrolled in the study. Newborns were randomly assigned the Chlorhexidine, placebo or dry cord care group. Umbilical swabs were collected at baseline (before the application of intervention), 2 hour and 48 hour after application of the assigned intervention. Presence of growth, identification to gram positive/ negative groups and semi-quantitative colony count was estimated for all samples.

**Results** The positivity was high baseline swabs 30% (154 of 512 samples). In 2 hour post intervention group Chlorhexidine significantly reduced the growth of pathogens compared to placebo (OR 0.15, p<0.01) and dry cord [OR 0.07, p<0.00]. In 48-hour swabs reduction in growth and density of organisms was observed in Chlorhexidine group [OR 0.11, p<0.01]. There was no difference between the control solution and dry cord group [OR 0.97, p=0.92].

**Conclusions** Chlorhexidine preparation was effective in reducing the growth and density of pathogens over the umbilical cord. The control preparation did not increase colonization but was similar to dry cord care group.

**EVALUATING OPTIMAL QUANTITY OF CHLORHEXIDINE SOLUTION NEEDED FOR APPLICATION TO UMBILICAL CORD OF NEONATES IN FIRST 10 DAYS OF LIFE**

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**Background** Efficacy studies of application of chlorhexidine on umbilical cord have suggested significant improvement in neonatal outcomes. An important question for new trials and programs however is what should be the quantity used. There are concerns about the increased risk of hypothermia resulting from spillage or over use of any cleansing liquid solution in newborn. In context of a randomized controlled trial evaluating impact of cord cleansing in Africa, on recommendation of DSMB we undertook a pilot study, which aimed to determine the optimal quantity of the intervention solution required for application on umbilical cord of newborn.

**Methods** Children were enrolled from both community and hospital in Pemba (n=62) and only from Hospitals in Delhi (n=50). Trained Hospital staff/MCH applied the intervention solution from a dropper bottle filled with 10 ml on the umbilical cord of the baby generously such that it covered umbilical cord and periumbilical area. A study supervisor to maintain consistency supervised the process. After application the unused volume from each of the containers was measured to determine the actual usage.

**Results** The mean volume of usage did not differ between Pemba and Delhi (4.58±0.8 ml and 4.79±1.88 ml respectively). The quantity of solution used ranged from 3ml to 7.5ml with a median of 4.5ml.

**Conclusions** The optimal requirement for application was found to be 5 ml. However to be little conservative we recommend use 6 ml to adjust for any spillage and/or any abnormally long cord.
Background and Aim The aim of this study was to investigate any changes in mean platelet volume (MPV) in patients with neonatal sepsis (NS).

Methods Consecutive newborns diagnosed with sepsis between March and July 2011 were included in the study. Subjects were stratified into two groups; proven sepsis (Group 1a) and clinical sepsis (Group 1b). The control group (Group 2) consisted of healthy newborns matched for gestational age and birth weight. Sequential measurements of white blood cell count (WBC), platelet count (PC), MPV, interleukin-6 (IL-6) and C-reactive protein (CRP) were compared between groups, and the diagnostic value of each marker for neonatal sepsis was evaluated.

Results A total of 100 patients with neonatal sepsis (35 with proven sepsis and 65 with clinical sepsis) and 50 healthy controls were enrolled. A comparison of markers of sepsis obtained at baseline revealed WBC, CRP, IL-6 and MPV levels to be significantly higher in newborns with sepsis compared to healthy controls (p < 0.001, < 0.001, < 0.001 and 0.001, respectively). Mean baseline serum levels of CRP and MPV were significantly higher in Group 1a compared to Group 1b (p = 0.005, p = 0.007, respectively), whereas the difference between group with regards to baseline serum levels of IL-6 and PC was statistically insignificant (p = 0.14, p = 0.28, respectively).

Conclusions This is the first study to demonstrate a statistically significant difference with regard to baseline MPV values between patients with sepsis (proven or clinical) and healthy controls. We believe that MPV could be a useful marker for the diagnosis of NS.

Conclusions High serum MPV levels in addition to CRP levels may be helpful in the diagnosis of newborns suspected to have sepsis.

Background The differentiation of transient tachypnea of the newborn from bacterial pneumonia presents an important diagnostic dilemma in Neonatal Intensive Care Unit.

Aim To evaluate the predictive value of procalcitonin for transient tachypnea of the newborn.

Methods Total 122 babies were included to study. All babies were term. Babies were categorized into three groups: If the baby has prominent grunting after 2 hours of age (Group 1, n = 38), if grunting subsided at 2 hours of age and baby has only tachypnea at 24 hours of age (Group 2, n = 41), if respiratory distress signs minimal or absent at 24 hours of age (Group 3, n = 43). In all groups, procalcitonin levels were determined at birth and 24 hours of age.

Results Procalcitonin levels at birth were significantly higher in Group 1 than other groups, but there was no difference between Groups 2 and 3. Procalcitonin levels at 24 hours of age were significantly higher in Group 1 and 2 than Group 3. No difference was found between Group 1 and Group 2 at 24 hours of age. All procalcitonin values in Group 3 were significantly lower than other groups. PCT thresholds for the diagnosis of transient tachypnea of the newborn were 0.49 ng/ml at birth (sensitivity 59%, specificity 51%), and 5.88 ng/ml at 24h of life (sensitivity 80.2%, specificity 90.7%).

Conclusions Serial procalcitonin measurement at birth and 24 hours of age may be helpful in differentiating between pneumonia and transient tachypnea of the newborn. Larger studies are needed to confirm our preliminary results.

Conclusions Serial procalcitonin measurement at birth and 24 hours of age may be helpful in differentiating between pneumonia and transient tachypnea of the newborn. Larger studies are needed to confirm our preliminary results.