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. Kariadi 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=0,003). 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 sepsis 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.

1176 INCIDENCE AND ORGANISAM PATTERN IN EARLY ONSET NEONATAL SEPSIS

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[1]LZ Hajnal Avramovic, [1]TP Lazic Mitrovic, [1]M Rascanin, [1]J Korac, [2]A Curkovic. *[1]Neonatal Department; [2]Maternity Department, GAK 'Narodni Front ', Belgrade, Serbia*

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 organisms 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.

1177 IMPACT OF 4% CHLORHEXIDINE CORD CLEANSING OF UMBILICAL CORD ON BACTERIAL GROWTH OF NEWBORNS IN PEMBA, TANZANIA

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[1]S Sazawal, [1]U Dhingra, [2]S Madhesiya, [3]A Dutta, [3]SM Ali, [3]S Ame, [3]S Deb, [1]R Black. *[1]International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA; [2]Center for Public Health Kinetics, New Delhi, India; [3]Public Health Laboratory-IdC, Chake Chake Pemba, Zanzibar, Tanzania*

Introduction Studies in Nepal, Pakistan, and Bangladesh have shown using 4% CHX solution for umbilical cord cleansing reduces neonatal mortality and omphalitis. 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 on 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.

1178 EVALUATING OPTIMAL QUANTITY OF CHLORHEXIDINE SOLUTION NEEDED FOR APPLICATION TO UMBILICAL CORD OF NEONATES IN FIRST 10 DAYS OF LIFE

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[1]S Sazawal, [2]S Nangia, [3]S Deb, [4]S Madhesiya, [3]A Dutta, [4]P Dhingra, [1]U Dhingra, [3]SM Ali, [3]S Ame, [4]S Gupta, [4]A Ahmed, [1]R Black. *[1]Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, USA; [2]Department of Pediatrics, Lady Hardinge Medical College & Kalawati Saran Children's Hospital, New Delhi, India; [3]Public Health Laboratory-IdC, Chake Chake Pemba, Zanzibar, Tanzania; [4]Center for Public Health Kinetics, New Delhi, India*

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.

1179 MEAN PLATELET VOLUME IN NEONATAL SEPSIS

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[1]MY Oncel, [1]R Ozdemir, [1]S Yurttutan, [1]FE Canpolat, [1]O Erdeve, [1]SS Oguz, [1]N Uras, [1,2]U Dilmen. *[1]Neonatology, Zekai Tahir Burak Maternity Teaching Hospital; [2]Pediatrics, Yıldırım Beyazıt University, Faculty of Medicine, Ankara, Turkey*

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=0.01, < 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.

1180 THE PREDICTIVE VALUES OF MEAN PLATELET VOLUME (MPV) IN THE DIAGNOSIS OF NEONATAL SEPSIS

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B Aydin, A Zenciroglu, D Dilli, S Erol, E Ozyazici, N Karadag, S Beken, N Okumus. *Neonatology, Dr Sami Ulus Maternity and Children's Health and Diseases Training and Research Hospital, Ankara, Turkey*

Background and Aim Researches to identify markers with high sensitivity and specificity in the diagnosis of neonatal sepsis are being held in parallel to recent advances in neonatology. In this study, we aimed to determine predictive values of MPV in the diagnosis of neonatal sepsis.
Methods All infants diagnosed with clinical sepsis according to clinical and laboratory findings were included in this prospective study. Blood samples for hemoglobin, hematocrit, number of leukocyte, absolute neutrophyl count (ANC), number of platelet, MPV, CRP, blood culture were obtained from each patient within the first 24 hours of hospitalization. Patients who have positive culture results were accepted as proven sepsis. Patients were separated into three groups as proven sepsis (n=82) (Group-1), clinical sepsis (n=64) (Group-2) and control group (n=142) (Group-3).
Results Group-1 CRP levels were higher (p=0.001) and number of platelets were lower (p=0.001) compared with other two groups. Leukocyte, ANC and MPV values were significantly high in Group-1 and Group-2 compared with Group 3 and there was no difference between Group-1 and Group-2 (p=0.001). Negative correlation was observed between MPV and platelet levels (r= –0.24, p=0.001) whereas positive correlation was observed between MPV and CRP levels (r=0.26, p=0.001). It was noted that for CRP- Specificity 82%, sensitivity 92%, negative predictive value (NPV) 83%, positive predictive value (PPV) 91%, and for MPV- Specificity 54%, sensitivity 82%, NPV 63%, PPV 76%.
Conclusion High serum MPV levels in addition to CRP levels may be helpful in the diagnosis of newborns suspected to have sepsis.

1181 PROCALCITONIN LEVEL AT 24 HOURS OF AGE MAY BE PREDICTIVE FOR TRANSIENT TACHYPNEA OF THE NEWBORN

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[1]A Annagür, [2]H Altunhan, [3]R Örs, [4]İ Mehmetoğlu. *[1]Selcuk University, Selcuklu Medical Faculty, Department of Neonatology, Konya; [2]Abant Izzet Baysal University, Medical Faculty, Department of Neonatology, Bolu; [3]Konya University, Meram Medical Faculty, Department of Neonatology; [4]Konya University, Meram Medical Faculty, Department of Clinical Biochemistry, Konya, Turkey*

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 tresholds for the diagnosis of transient tachypnea of the newborn were 0.49 ng/ml at birth (sensitivity 59%, specificity 51%); and 5.88ng/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.

1182 TOTAL OXIDATIVE STATUS, TOTAL ANTI-OXIDATIVE STATUS AND PARAOXONASE-1 LEVELS IN NEONATAL SEPSIS

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[1]A Annagür, [2]H Altunhan, [3]M Konak, [4]S Kurban, [3]R Örs. *[1]Department of Neonatology, Selcuk University, Selcuklu Medical Faculty; [2]Department of Neonatology, Abant Izzet Baysal University, Medical Faculty; [3]Department of Neonatology; [4]Department of Clinical Biochemistry, Konya University, Meram Medical Faculty, Konya, Turkey*

Aim Paraoxonase-1 (PON-1) is a calcium dependent glycoprotein enzyme that is found on the high density lipoprotein (HDL) in serum. PON-1 has been shown to protect low-density lipoprotein (LDL) and high-density lipoprotein (HDL) against oxidation and can reduce oxidative stres. In sepsis increases oxidative stres and decreases HDL concentrations. The aim of this study was to evaluate oxidant/anti-oxidant status in neonatal sepsis before and after therapy and to determine whether PON-1 could be used to monitor the treatment of neonatal sepsis.
Method Thirty-five patients with neonatal sepsis and 35 healthy controls were included in the study. PON-1 activities, total oxidant status (TOS), total anti-oxidant status (TAS) groups were measured and an oxidative stres index (OSI) was calculated.
Results Plasma levels of TOS, TAS and OSI were significantly higher in patients with neonatal sepsis before therapy as compared to after treatment (p<0.000, p<0.000 and p<0.000, respectively), plasma PON-1 level was significantly lower (p<0.000).