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=0.3–6.3; 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.

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

1LJ Hajnal Avramovic, 1TP Lazic Mitrovic, 2M Rascanin, 1J Konac, 3A Curkovic. 1Neonatal Department; 2Maternity Department, GAK ‘Mardani Franti’, 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 6683 neonates) in 2011. B Streptococcus were the most common organism (3.4/1000) in the term infants. Staphylococcus coagulase-negative was second with rate 2.3/1000. Escherichia coli (3.8/1000) and Staphylococcus coagulase-negative (3.5/1000) were the second 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 NEWBORN IN PEMBA, TANZANIA**

1S Sazawal, 1U Dhingra, 2S Madhesiya, 3A Dutta, 4S Ali, 5A Ame, 4S Gupta, 4A Ahmed, 1R Black. 1International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA; 2Center for Public Health Kinetics, New Delhi, India; 3Public Health Laboratory-IdC, Chake Chake Pemba, Zanzibar, Tanzania; 4Center for Public Health Kinetics, New Delhi, India

**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.