Background and Aims To determine the demography, clinical manifestations and the most common organism isolated of the urinary tract infection (UTI) in the newborn infants who were admitted to the neonatal intensive care unit (NICU).

Methods Newborn infants diagnosed with UTI were investigated retrospectively, clinical and demographic characteristics of infants were collected from the medical records in the NICU. Urine cultures were obtained by suprapubic aspiration or urinary catheter.

Results Fifty-one infants were included in this study. The mean (±SD) gestational age and weight of infants were 31.53±4.32 weeks, and 2405±902.21 g respectively. Male patients accounted for 56.9% of the study group. Infants born with cesarian section were 86.3%. The median age for the urine culture was 31.53±4.3 days.

Klebsiella pneumoniae was the dominant microorganism isolated in 22 patients (43.13%), followed by Escherichia coli in 13 patients (25.4%). The most common presenting symptoms were vomiting in 99(76.5%) infants, desaturation in 34 (66.7%) infants, tachycardia in 31 (60.8%) infants, apnea in 21 (41.2%) infants and jaundice in 18 (35.3%) infants.

Conclusions The incidence of UTI in newborn infants is 0.1–1% and it can be as high as 10% in low-birthweight and preterm babies. The presentation of UTI in the neonatal infants is non-specific and the most common clinical manifestations are vomiting, fever, enteral feeding intolerance, apnea and bradycardia. In this study, desaturation and tachycardia are also shown as presenting manifestations of UTI. Klebsiella pneumonia was the dominant microorganism isolated in 22(43.13%) patients in our study.

1334 EFFECTS OF INTRAPARTUM ANTIBIOTIC PROPHYLAXIS ON NEWBORN MICROBIOTA

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1C Corvaglia, 1E Legnani, 1D Di Gioia, 1A Aloisi, 1S Martini, 1M Osso, 1B Biavati, 1G Fulda, 1Neonatology and Intensive Care Unit - Sant’Orsola-Malpighi Hospital - University of Bologna; 2Department of Agroenvironmental Science and Technology, University of Bologna; 3Department of Agroenvironmental Science and Technology - University of Bologna, Bologna, Italy

Background and Aims Group B Streptococcus (GBS) early-onset bacterial sepsis is an important cause of neonatal morbidity and mortality. In the last decade, after the introduction of intrapartum antibiotic prophylaxis in pregnant women during labor and delivery, the sepsis-associated death rates have declined. The aim of this study is to evaluate the effects of antibiotic treatment of pregnant women GBS-positive on early colonization of bacteria in the newborn gut, which is known to be related to immunity development.

Methods Thirty-four vaginal delivered and breastfed newborns were enrolled; 17 had mothers GBS-positive treated with 2g of Amoxicillin and 17 had mothers GBS-negative (control group).

Two-hundred milligrams faeces were collected for each subject and processed for DNA extraction, performed with QiAamp DNA Stool Mini Kit (Qiagen, Cat. No. 51504). Lactobacillus spp., Bifidobacterium spp., Bacteroides fragilis group, C. difficile and E. coli quantification was obtained with real-time PCR. Data of microbial counts were subjected to one-way variance analysis in order to evidence significant differences between treated and control group of newborns.

Results Antibiotic therapy reduced the intestinal colonization of Bifidobacterium: 5.51 Log(CFU/g) in treated samples against 7.07 Log(CFU/g) in control samples; P<0.05.

All the other microbial genera and species analysed were not affected by the maternal treatment with Amoxicillin.

Conclusions Preliminary results showed a decrease of early Bifidobacterium count in the microbiota of newborns; the clinical meaning or the effect on newborn immunity need to be investigated with larger studies.

1335 EFFICACY OF PROPHYLACTIC FLUCONAZOLE IN REDUCING CANDIDEMIA IN HIGH RISK NICU AND PICU PATIENTS

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DA Daeem. Pediatrics, Ibn Sina College Hospital, Jeddah, Saudi Arabia

Background Candidal infection is a common cause of morbidity and mortality in neonatal intensive care unit (NICU) and pediatric intensive care unit (PICU) patients, especially those with risk factors.

Objectives To determine the prevalence of Candida species in risky NICU and PICU patients and evaluate the efficacy of prophylactic Flucanazole in reducing Candida colonization and subsequent invasive candidemia in those patients.

Design Prospective, randomized, double blind placebo controlled clinical study.

Setting Tertiary level intensive care units at pediatric department.

Subjects 80 intensive care unit high risk group patient of neonatal and pediatric age.

Intervention Children were randomly grouped during first three days to receive either Fluconazole or placebo till 25 days or less, if discharged or died earlier. Weekly surveillance cultures from oropharyngeal swabs, urine, stool, sputum (when available), and blood.

Results Baseline risk factors for Candida infection in Fluconazole and Placebo groups were similar. Candida colonization was reported in 35 patients (87.5%) in the placebo group which was significantly higher (P=0.0001) than that detected among patients in the Fluconazole treated group [10 patients (25%)]. fluconazole treated group showed significantly lower colonization with Candida albicans (C. albicans) and higher colonization with non Candida albicans (non-C. albicans) versus placebo group. Invasive Candida infection was significantly higher (P=0.03) among placebo group than Fluconazole treated one. Invasive non-C. albicans infection was reported in 9/13 patients [6 patients (66.6%) in Placebo group and 3 patients (33.3%) in Fluconazole treated group].

Conclusion Prophylactic Flucanazole in risky patients in ICU is effective in reducing Candida colonization but not invasive candidemia.

1336 POSTNATAL SERUM CREATININE TRENDS IN NEONATES: JAFFE COMPARED TO ENZYMATIC QUANTIFICATION TECHNIQUE

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1A Smits, 1J Kelchtermans, 1S Hendrickx, 1D Mekahli, 1F Vanstapel, 1P Vermeersch, 1E Levchenko, 1K Allegaert. 1Neonatal Intensive Care Unit; 2Department of Pediatric Nephrology; 3Department of Laboratory Medicine, University Hospitals Leuven, Leuven, Belgium

Background Serum creatinine (Scr) reflects to a certain extent GFR in neonates, but postnatal observations also depends on the technique used (Jaffe colorimetry or enzymatic quantification) as recently quantified in ELBW’neonates (1,2). We aimed to assess the impact of enzymatic versus Jaffe quantification and to describe postnatal Scr trends for both techniques in neonates with higher birth weight (3).

Methods Scr values quantified by Jaffe in 1140 neonates were compared to values obtained by enzymatic quantification in 1023 neonates in one NICU. All Scr values collected in the first 42 days of postnatal life were included and postnatal trends for cohorts < 1kg, 1–2 kg, 2–3 kg and > 3 kg were compared.

Results Postnatal patterns were similar between both techniques, with an initial increase of Scr (highest and last in the smallest neonates) in early postnatal life, and a subsequent decrease, most...
delayed in the smallest neonates. For all consecutive postnatal observations, Jaffe always resulted in higher Scr compared to the enzymatic technique, but the differences in median values between both techniques (0.1–0.26 mg/dl, equal to 8.8–23 μmol/l), were not a fixed value.

**Conclusions** When using Scr to estimate renal function in neonates, clinicians should in addition to postnatal changes and other covariates of renal function, also consider the technique applied. There is no fixed conversion factor to correct for differences between both techniques.


### 1337 **NEWBORN AND ADULT MONOCYTES SHOW DIFFERENT INFLAMMATORY RESPONSES TO BACTERIAL INFECTION: POTENTIAL ROLE OF MAPK INHIBITION**

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EM Speer, AJ Chander. Pediatrics, Stony Brook University, Stony Brook, NY, USA

**Background and Aims** The neonatal inflammatory response is associated with adverse outcomes like chronic lung disease. Recent studies suggested that newborn innate immune responses differ from adults. We aim to compare the expression of inflammatory cytokines between newborn and adult monocytes, and to investigate the mechanisms underlying the differential response.

**Methods** Purified monocytes from 15 healthy term newborns (C-section, no labor or chorioamnionitis) and 15 healthy adults (no infection), were cultured (90min) and stimulated without or with 0.1ng/ml or 10ng/ml LPS for 4 or 24 hours. Cells were harvested and RNA extracted. mRNA expression was determined with real-time PCR and normalized to β2-microglobulin as housekeeping gene.

**Results** Results are discussed in comparison to control values. Newborn monocytes showed increased IL6 (0.1ng/ml or 10ng/ml LPS) and TNFα (0.1ng/ml LPS) expression after 4h, whereas IL10mRNA was lower after 4h and 24h LPS compared to adults. LPS-stimulation increased NFKBp65 expression in adults but not in newborns at 24h. IKKβ and Toll-interacting protein were comparable between groups. IRAK3 (TLR4-pathway regulator) was elevated in newborns at 4h and 24h with LPS-stimulation, but only at 24h in adults. Dual specificity phosphatase 1 (DUSP1) was significantly lower in newborn monocytes compared to adults after 24h LPS at both concentrations.

**Conclusions** Newborn compared to adult monocytes show increased expression of inflammatory cytokines. Diminished upregulation of DUSP1 (negative regulator of MAPK-pathway) might explain the enhanced pro-inflammatory profile of newborn compared to adult monocytes after microbial stimulation.

### 1338 **HIGH PROPORTION OF INTESTINAL ESBL COLONIZATION AMONG INFANTS AT A NEONATAL INTENSIVE CARE UNIT IN A TERTIARY HOSPITAL IN ECUADOR**

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V Nordberg, 1 A Quisphe, 1 Giske, 1 A Iversen, 1 T Galindo, 1 E Ochoa, 1 L Navér.
1 Department of Clinical Science, Intervention and Technology (CLINTEC)/Division of Paediatrics, Karolinska Institute, Karolinska University Hospital, Stockholm, Sweden; 2Faculty of Medical Science, University of Cuenca. Hospital Vicente Corral Moscoso, Cuenca, Ecuador; 3Department of Microbiology, Tumor and Cell Biology (MTC), Karolinska University Hospital, Stockholm, Sweden

**Background and Aims** Neonatal infections caused by Extended-spectrum beta-lactamase (ESBL)-producing bacteria are associated with increased morbidity and mortality. No data are available on neonatal colonization with ESBL-producing bacteria in Ecuador. The study aimed to assess the proportion of intestinal colonization with ESBL-producing *Enterobacteriaceae* and their resistance pattern among infants hospitalized at the neonatal intensive care unit, Cuenca, Ecuador.

**Methods** From February to April 2011, stool specimens were collected, every two weeks, from all hospitalized neonates. Rectal swabs were plated on Mac Conkey agar containing cefotaxime and ceftazidime. Species identification and susceptibility tests were confirmed with Vitek2 and the epidemiologic typing was performed using Diversilab (Both bioMérieux).

**Results** 137 specimens were collected from 78 patients and 61.5% of the neonates became colonized with ESBL. The majority of the strains were *Escherichia coli* (EC, 88.5%) followed by *Klebsiella pneumoniae* (KP, 11.5%). Gentamicin resistance occurred in 98.6% of the EC and 100% of the KP and ciprofloxacin resistance in 98.6% of the EC and 0% of the KP strains. All strains were susceptible to carbapenems. Epidemiologic typing divided the EC isolates in two clusters and one unique isolate and the KP isolates were divided in two clusters. All EC and KP had blaCTX-M group 1 except for the unique EC isolate that had blaCTX-M group 9.

**Conclusions** The high proportion of patients colonized with four clones of ESBL-producing bacteria, reinforces the necessity for implementing surveillance programs as well as improved infection control to prevent further spread of ESBL strains between hospitalized neonates.

### 1339 **THE VALUE OF PLACENTAL PATHOLOGICAL AND MICROBIOLOGICAL ASPECTS ON PRETERM DELIVERY AND OUTCOME**

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A Korraa, Z Nabli, N Samir, E El Geriany. Pediatrics; 1Microbiology, Faculty of Medicine for Girls, Al Azhar University; 2Pediatrics; 3Pathology, Ain Shams University, Cairo, Egypt

**Background** Both clinical findings and the high incidence of decidual inflammation/infection in placentas are associated with preterm deliveries.

**Objectives** To find out the relation of histopathology and microbiology findings of the placenta and preterm birth and to document the association of placental changes and neonatal outcome.

**Methods and results** A comparative, analytical study was carried out on Placentas from 100 mothers, 50 with preterm delivery (case group), and 50 with full term delivery(control group). Pathology of the placenta and PCR to detect bacterial SrDNA were performed for the placentae and neonates. Preterm Placentas showed a significantly higher inflammatory lesions than those of full term placentas. (68% in preterm versus 4% in full term). The percentage of bacterial isolation by PCR from preterm placenta was significantly higher than full term placenta (75% vs 22%), suggesting that most of unexplained preterm delivery is inflammation and/or infection related. The study demonstrated significant association between placental and neonatal bacterialSrDNA. Our results showed that placental inflammatory lesions were significantly associated with lower gestational age, lower weight and length of preterm neonates. On follow up of the preterm neonates, the percentage of RDS, SGA, BPD and neonatal mortality rate were higher among preterm with placental inflammation/infection than those without.

**Conclusion** Infection of the placenta is associated strongly with histological chorioamnionitis and preterm birth. Placental pathology is very useful in identifying undiagnosed subclinical maternal infection. The percentage of neonatal morbidity and neonatal mortality were higher in cases with positive placental findings for inflammation and infection.