Conclusion This result shown that the most contamination in NICU is from gram negative bacteria.

PO-0561 THE IMPACT OF THE SEPSIS SEVERITY TO THE OXYGENATION OF THE IMMATURE NEONATAL BRAIN

[1]D Rallis, [2]P Karagianni, [2]E Mylona, [2]N Nikolaidis, [2]C Tsakalidis. *[1]Paediatrics, Aghia Sophia Children's Hospital, Athens, Greece; [2]Neonatal Unit, Papageorgiou General Hospital, Thessaloniki, Greece*

10.1136/archdischild-2014-307384.1203

Background and aims Sepsis is major cause of neonatal morbidity and mortality. The level of organ dysfunction is related to the severity of sepsis, as milder episodes seem to lead to less injury. Our aim was to evaluate differences in brain oxygenation, measured by Near Infrared Spectroscopy (NIRS) and estimated via TOI (Total Oxygen Index) and FTOE (Fraction Tissue Oxygen Extraction), according to the sepsis severity.
Methods We designed a prospective study in the 2nd NICU of AUTH, Greece, between 6/2012–12/2012. Neonates with confirmed sepsis underwent 3 NIRS measurements on day 1, 3 and 7 of the episode. Sepsis was classified according to IPSCC criteria into: Sepsis, Severe Sepsis and Septic Shock.
Results Fifty neonates were enrolled with equal birthweight (sepsis: 1610 gr, severe sepsis: 1670 gr, septic shock: 1550 gr) and gestational age (31, 31, 30 weeks respectively).

A TOI decrease/FTOE increase in the 7th day was recorded in all groups (Sepsis: TOI: 68, 70, 62, FTOE: 29%, 27%, 35%, Severe sepsis: TOI: 66, 70, 62, FTOE: 29%, 27%, 33%, Septic Shock: TOI: 64, 66, 61, FTOE: 33%, 29%, 35%). Neonates with severe sepsis and septic shock required more intensive management and had worst outcome. The brain oxygenation, however, was equally decreased in all 3 groups ($p > 0.05$), irrespectively to the severity of the septic episode.
Conclusion The outcome of the neonates is proportionally depended to the severity of sepsis, however, even the milder forms seem to cause significant decrease on the brain oxygenation and potential equal brain injury.

PO-0562 PREVALENCE OF GRAM NEGATIVE ORGANISMS ON ROUTINE SURVEILLANCE IN A TERTIARY NEONATAL INTENSIVE CARE UNIT

[1]MJ Cawsey, [1]SV Rasiah, [2]J Gray. *[1]Neonatal Intensive Care Unit, Birmingham Women's NHS Foundation Trust, Birmingham, UK; [2]Microbiology, Birmingham Women's NHS Foundation Trust, Birmingham, UK*

10.1136/archdischild-2014-307384.1204

Background and aim We perform weekly surveillance for gram negative organisms by rectal swabs and surface swabs for all babies admitted to the neonatal unit. The aim of the audit was to look at the prevalence of colonisation with gram negative bacteria (GNB) and the outcome of these babies.
Methods This was a retrospective review of all positive rectal and surface swabs from 01/04/13 to 31/03/14.
Results In the last year we had 1465 admissions. The results of the screening programme are shown in the table below. These included GNB on surface or rectal swabs.

Abstract PO-0562 Table 1

	Preterm	Term > 37 weeks
Admissions *n*	705	760
n with positive swab	65(9.2%)	13(1.7%)
Median day of isolation	14(0–115)	3(1–40)
Median gest age	28^{+3} (23^{+5}–36^{+5})	39^{+6} (37^{+1}–42^{+0})
	1060	3180
Median birth weight	(500–3260 g)	(2280–4820 g)
Inborn:Outborn	57:8	10:1
n had Surgery	10(15%)	2(15%)
Use of Meropenem	28(43%)	1(8%)
Organisms		
Pseudomonas	13	4
ESBL	10	4
Serratia	17	1
Gent resistant organism	18	2
Acinetobacter	7	2
Outcome		
Discharged home	43	9
Transferred out	15	3
Died	5	0
Inpatient	2	1

Conclusion Preterm babies are at an increased risk of being colonised with GNB at a later date whilst on the neonatal unit. In comparison, term babies were likely to have incidental GNB isolates earlier on. Having a surgical procedure increased the chances of being colonised with GNB. The use of Meropenem was increased in the preterm population. We routinely isolated these babies with GNB until discharge from the neonatal unit.

PO-0563 DOES EARLY CRP PREDICT CHORIOAMNIONITIS IN VERY LOW BIRTH WEIGHT PRETERM INFANTS?

[1]E Ryan, [2]D Eves, [2]P Jayadev Menon, [2]S Alnafisee, [3]E Mooney, [3]P Downey, [1]EJ Molloy. *[1]Neonatology, National Maternity Hospital, Dublin, Ireland; [2]Paediatrics, Royal College of Surgeons, Dublin, Ireland; [3]Pathology, National Maternity Hospital, Dublin, Ireland*

10.1136/archdischild-2014-307384.1205

Background Chorioamnionitis (CA) is associated with preterm birth and adverse neonatal outcomes. The correlation between stage of histological CA, and haematological parameters in the early postnatal period are incompletely defined.
Aim To examine the relationship between CRP and grade of CA in VLBW infants and any associations with neonatal outcomes.
Methods A retrospective review of consecutive infants born <32 weeks gestation or <1.5 kg at a single centre tertiary referral centre. CA on placental histology was reported as solely maternal inflammatory response (MIR) or both MIR and fetal inflammatory response (FIR). Demographics, haematological parameters and outcomes were recorded.
Results 509 infants were included and histological CA was found in 20% of placentas but 47.8% at <28 wks. CRP was raised above baseline (>0.3 mg/L) in 61.8% of infants with FIR, 64.7% of infants with MIR and 18.8% with no CA. CRP on day 1 >5 mg/L was specific for 90.9% of FIR, 3% of MIR, and 6.1% of infants no CA. CRP >10 mg/L was 100% specific for CA but not sensitive.. Advanced FIR on histology (funisitis) correlated significantly with higher CRP. A pathogen was isolated in 0.6% of CA and blood cultures were positive in 0.02% of preterm infant with the following outcomes: died (n = 6); FIR (n = 8); Funisitis (n = 5); High CRP (n = 5).

Conclusion CRP has good specificity (96% at 1 mg/L) for CA in preterm infants. Higher initial CRP levels in infants correlate with severity of histological CA.

PO-0564 TURN-AROUND-TIMES FOR PATHOGEN IDENTIFICATION AND ANTIBIOTIC SUSCEPTIBILITY TESTING IN INFANTS WITH EARLY-ONSET BACTERIAL SEPSIS

S Sarkar, SS Sarkar. *Neonatal-Perinatal Medicine, University of Michigan Health System, Ann Arbor, USA*

10.1136/archdischild-2014-307384.1206

We characterised the turn-around-times for pathogen identification with antibiotic susceptibility, and outcomes in newborn infants with early-onset bacterial sepsis (EOS).

Methods Eighty infants with EOS were retrospectively reviewed. EOS was defined by isolation of a pathogen from blood culture drawn within 72 h of birth and antibiotic treatment for ≥5 days.

Results Thirty-seven of the 80 infants were deemed to have true EOS, and 43 were deemed contaminants. The organisms grown in true EOS cases were: E. Coli in 16, Group B Streptococcus in 10, Alpha hemolytic Streptococci in 6, and others in 5.

The median (25%-75% IQR) time noted from blood culture positivity to identification of the organisms with susceptibility testing was almost 4 times longer compared to the time from collection of blood culture specimens to blood culture positivity (79 h, IQR 52 h–101 h, versus 19 h, IQR 16 h–21 h, $p < 0.0001$) in true cases of EOS. The contaminants took longer to identify compared to true cases ($p < 0.05$).

Four infants died of gram negative sepsis. Two of these infants with ampicillin resistant E. Coli died from delayed implementation of appropriate organism-specific antibiotic treatment as the susceptibility results took too long to become available.

Conclusions Definitive identification of the pathogen with the currently used laboratory methods take too long affecting outcome of infants with EOS. Empiric antibiotics were continued too long unnecessarily because of delayed identification of the contaminants. Rapid identification of an organism to a species level utilising newer technologies needs to be developed.

PO-0565 FOUR YEARS COHORT OF LATE PRETERM INFANTS FROM A TERCIARY SPANISH HOSPITAL: RISK FACTORS FOR RESPIRATORY SYNCITIAL VIRUS INFECTIONS

L Serrano López, L Zamorano Bonilla, MV Jimenez Cabanillas, E Martin Alvarez, M Peña Caballero, JA Hurtado Suazo. *Neonatology, University Hospital "Virgen de Las Nieves", Granada, Spain*

10.1136/archdischild-2014-307384.1207

Background and aims Respiratory Syncitial Virus (RSV) causes respiratory infections that may be severe, especially in one of the highest risk populations: Premature infants. Palivizumab has proven safe and efficacious in reducing hospitalisation rate for RSV induced bronchiolitis in preterm neonates.

This study aimed to evaluate in a Spanish cohort of late preterm infants the incidence and risk factors of hospitalisation for RSV bronchiolitis. Update the indication of RSV prophylaxis.

Methods Descriptive study. A cohort of late preterm infants born in a Spanish third level hospital (2010–2014) was enrolled. Medical records were reviewed. Risk factors for RSV infections were reviewed. Recommendations for inmunoprophylaxis issued by the Spanish Society of Neonatology 2010 were followed.

Results 887 late preterm infants were enrolled. 4,1% were hospitalised for RSV bronchiolitis, median age was 5 months old. According to the gestational age: 16% were 34 weekers (one RSV prophylaxis), 45% 35 weekers (three RSV prophylaxis), and 38% 36 weekers (one RSV prophylaxis).

The risk factors for RSV hospitalisation: 56% were born in RSV season, 48% had school age siblings, 54% were male gender. Anyone was exposed to passive cigarette smoke.

16% were admitted to ICU. All the hospitalised infants required oxygen at any time. No deaths were reported.

Conclusions Hospitalisation rate for RSV bronchiolitis in late preterm infants of our cohort was higher than the estimated one in overall population. RSV prophylaxis was not routinely scheduled to late preterm infants according to the Guidelines issued by the Spanish Society of Neonatology. Its risk scoring tool for prophylaxis can be used to identify infants at higher risk.

PO-0566 PLATELETS AS THE OPSONINS THAT PROMOTES INGESTION OF MICROBES DURING NEONATAL SEPSIS

[1]M Sherman, [1]L Wahidi, [2]J Sherman. *[1]Child Health, University of Missouri, Columbia, USA; [2]Sinclair School of Nursing, University of Missouri, Columbia, USA*

10.1136/archdischild-2014-307384.1208

Background and aims Complement and IgG are humoral opsonins. We theorised platelets might be opsonins in neonates. We proposed that persistent neonatal bloodstream infections and thrombocytopenia might provide proof of the concept if there was high rather than low mean platelet volumes [MPVs] during infections (i.e., platelets consumed during phagocytosis).

Methods From 2008 to 2013, all neonates >3 days of age and that had positive blood cultures underwent a record review. Infants were included if they had ≥ 2 positive blood cultures and had platelet counts $<10^5$ per mm^3. Exclusion criteria were necrotizing enterocolitis, coagulopathy, organ or catheter-related thrombosis or endocarditis.

Results Among 77 positive blood cultures, two methicillin-resistant *Staphylococcus aureus* [MRSA] and two *Candida* bloodstream infections persisted and had thrombocytopenia. The four infants had initial elevated MPVs that declined to normal only with the resolution of infection. Blood smears had no aggregates of platelet, microbes and phagocytes. One MRSA and two *Candida* infections with associated thrombocytopenia occurred in extremely preterm infants; they had no elevation in MPVs and expired quickly. A review of all 77 infants with late-onset sepsis revealed the infecting microbe and extreme prematurity modulated the kinetics of MPVs during infection.

Conclusions Two pathogens that likely resisted opsonization with complement and IgG were associated with continuing neonatal sepsis and thrombocytopenia. High MPVs suggests defective platelet production was not responsible for thrombocytopenia, but macrophages and neutrophils likely removed platelet-microbe-aggregates from the blood. These findings offer indirect proof that platelets may act as opsonins during neonatal phagocytosis.