

Abstract PO-0549 Figure 2 Appropriateness of Antimicrobial use

Abstract PO-0549 Table 2

	Inappropriate (%)	p-value
Overall	10%	
<b>Location</b>		
NICU	12%	
ICN	5%	0.002
<b>Indications</b>		
Perinatal Infection	7%	
Healthcare associated Infection	12%	
Surgical Prophylaxis	41%	<0.001
Medical Prophylaxis	0%	

**PO-0550 USE OF PROFILATIC ANTIBIOTICS FOR PRETERM INFANTS-**

FE Martinez<sup>1</sup>, <sup>1</sup>WAG Ferri, <sup>1</sup>MM Mussi-Pinhata, <sup>2</sup>VOS Abdallah, CR Leone<sup>3</sup>, <sup>3</sup>BNNR Brazilian Network on Neonatal Research. <sup>1</sup>Pediatrics, University of Sao Paulo, Ribeirao Preto, Brazil; <sup>2</sup>Pediatrics, Federal University of Uberlandia, Uberlandia, Brazil; <sup>3</sup>Pediatrics, University of Sao Paulo, São Paulo, Brazil

10.1136/archdischild-2014-307384.1192

The objective was to explore the association between antibiotic use in the first 72 h of life in low risk for infection preterm infants and nutritional performance.

Among the 4344 children born between 2010 and 2012 in 16 centres of the BNNR weighing <1495 g, 2395 infants presented no maternal history of chorioamnionitis, <18 h of ruptured membranes, no diagnosis of sepsis in the first 72 h of life and no congenital malformations. Antibiotics were given to 959 infants during the first 72 h of life and 1436 received no antibiotics.

The use of antibiotic was more frequent among children with worst birth conditions and those infants presented poorer evolution parameters except for lower incidence of late onset sepsis.

In nutritional terms, after binary logistic regression (BLR), the use of antibiotics remained as independent risk factors to take over 14 days to regain birth weight and for having lost more than 1 z-score in weight at discharge.

Centres were stratified by the percentage of antibiotic use. Prenatal and birth condition of the two centres strata were very similar. Infants from Conservative centres presented better

nutritional performance, but higher incidence of late onset sepsis, use of antibiotics after 72 hs, more days of oxygen use.

At BLR for use of oxygen at 36 CA, neither centre strata, nor use of antibiotics during the first 72 hs of life maintained the association found on the univariate analysis.

The use of antibiotics in the first 72 h was independently associated with worse nutritional performance.

**PO-0551 AN AUDIT OF ANTIBIOTIC USE FOR EARLY ONSET NEONATAL INFECTION IN A NORTHERN IRISH DISTRICT GENERAL HOSPITAL**

L McDowell, N Geoghegan, M Hogan, J Henderson. Paediatrics, Craigavon Area Hospital, Portadown, UK

10.1136/archdischild-2014-307384.1193

**Background** Early onset neonatal sepsis is a significant cause of morbidity and mortality. The decision to treat has consequences and a balance must be reached between identifying sick babies and avoiding the potential hazards associated with investigations and over-treatment. Using the 2012 National Institute of Clinical Excellence (NICE) guideline we aimed to identify neonates at risk of sepsis and initiate treatment early. The purpose of the audit was to assess Craigavon Area Hospital's adherence to this guideline.

**Methodology** All neonates who were commenced on antibiotics within the first 72 h of life between 9th–28th September 2013 were identified. A re-audit was carried out between 5th–19th January 2014. 17 patients were included in the first audit and 15 in the second cycle. Clinical notes were retrospectively analysed by two investigators. The NICE audit tool was used to examine domains including; time taken to commence treatment, use of the correct dose regime of appropriate antibiotics, appropriate blood tests and prompt action on results. As a result of the first audit cycle a checklist was developed highlighting risk factors for sepsis and NICE guidelines. This was included in medical notes as a prompt for junior doctors. The re-audit evaluated for improved performance.

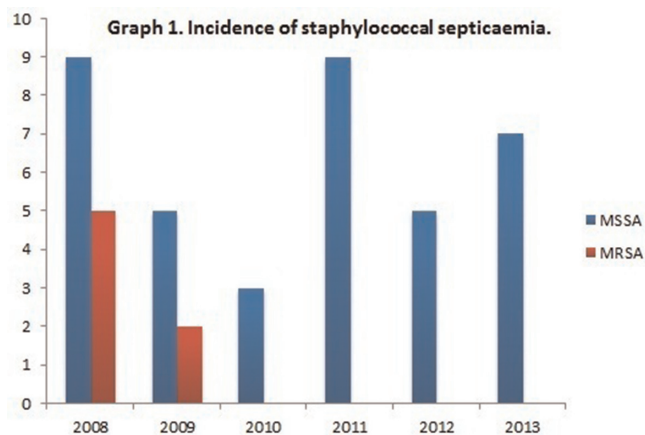
**Results and conclusions** Overall the unit adhered well to the guideline. Areas for improvement included; availability of culture results within 36 h and repeat of inflammatory markers 18–24 h after commencing antibiotics. Introduction of the checklist improved observation of NICE guidelines overall although availability of culture results remained problematic.

**PO-0552 CHANGING EPIDEMIOLOGY OF STAPHYLOCOCCUS AUREUS IN A TERTIARY NEONATAL INTENSIVE CARE UNIT (NICU), 2008–2013**

<sup>1</sup>L McKechnie, <sup>1</sup>SJ English, <sup>2</sup>K Sethi. <sup>1</sup>Department of Neonatology, Leeds Teaching Hospital NHS Trust, Leeds West Yorkshire, UK; <sup>2</sup>Department of Microbiology, Leeds Teaching Hospital NHS Trust, Leeds West Yorkshire, UK

10.1136/archdischild-2014-307384.1194

**Background and aims** *S.aureus* is the second most common pathogen causing late onset septicemia in NICUs, particularly in premature infants with very low birth weight. Poorly developed host defence mechanisms, the necessity for central venous catheters, invasive procedures, poor skin integrity, prolonged total parenteral nutrition and the use of steroids or antimicrobial agents all increase the risk of staphylococcal infection in premature infants.



Abstract PO-0552 Figure 1

We describe the changing epidemiology of *Staphylococcus aureus* infections in NICU at Leeds over 2008–2013 using laboratory and clinical data.

**Method** Leeds neonatal service experienced an increased number of cases of *Meticillin resistant Staphylococcus aureus* (MRSA) colonisation and bacteraemia in 2008–2009. A series of infection control interventions were implemented stepwise including:

- asepsis training.
- weekly screening.
- adoption of the Saving Lives central venous catheter package,
- daily antiseptic skin washes in neonates >28 weeks.
- 2% Chlorhexidine for skin asepsis prior to invasive procedures.

**Results** There has been a noticeable success in reduction in MRSA infections and no bacteraemia has been reported since 2009 (Graph 1). A similar improvement has not been seen in *Meticillin sensitive Staphylococcus aureus* (MSSA) bacteraemia.

A retrospective review carried out to review MSSA bacteraemia since 2008: 71% (27 of 38) cases were in neonates under 28 weeks, a vulnerable cohort currently excluded from daily skin washes.

**Conclusions** Given an association between MSSA colonisation and infection, further work should investigate infection control strategies that effectively target the highest risk groups and include active surveillance for MSSA and MRSA with subsequent decolonization.

#### PO-0553 CONTRIBUTIONS OF CHANGES IN SERUM PROCALCITONIN CONCENTRATION IN THE TREATMENT OF SECONDARY SEPSIS IN NEWBORN

<sup>1</sup>A Du Mesniladelée, <sup>1</sup>V Champion, <sup>1</sup>M Lachtar, <sup>1</sup>I De Montgolfier, <sup>1</sup>F Kieffer, <sup>2</sup>D Mitanchez. <sup>1</sup>Neonatology, Hôpital Armand-Trousseau, Paris, France; <sup>2</sup>Neonatology, Hôpital Armand-Trousseau Université Paris06, Paris, France

10.1136/archdischild-2014-307384.1195

**Background and aims** Procalcitonin (PCT) is used in the early diagnosis of infections. Recently, PCT has been used in both adults and children as a guide to the duration of antibiotic treatment. The aims are to study the evolution of PCT during secondary sepsis in the newborn and to evaluate its ability to guide the duration of antibiotic treatment.

**Patients and methods** A prospective, observational study including all neonates hospitalised in a level II neonatal unit between

December 2011 and January 2013 with suspected infection after 5 days of life and serum PCT >0.6 ng/L. Serial PCT, CRP and blood culture survey was performed according to the usual protocol. Adapted antibiotherapy was administered for 10 days after the last positive blood culture.

**Results** 54 infective episodes were observed in 46 neonates, born at a mean term of 32 weeks (range: 26–40) and infected for a mean of 19 days (7–40). *Staphylococci* and gram-negative bacteria caused respectively 57% and 22% of infective episodes. At the time of clinical diagnosis (D0), 74% of the PCT values and 81.5% of the CRP values were positive. Between D5 and D8, 80% of PCT measurements were negative (<0.6 ng/L) versus only 25% of CRP. On D8, 47.0% of CRP measurements were still positive. Had antibiotherapy been discontinued when PCT was <0.6 ng/ml, it would have been 5 days shorter.

**Conclusion** In newborn with secondary sepsis, serum PCT may help to reduce antibiotherapy duration and this should be examined in a controlled study.

#### PO-0554 CREATING A NETWORK OF NEONATOLOGISTS, CHILD HEALTH RESEARCHERS, AND PUBLIC HEALTH SPECIALISTS TO STUDY NEONATAL INFECTIONS' RELATED MORTALITY AND MORBIDITIES IN EGYPT

<sup>1</sup>M Mohamed, <sup>2</sup>A Roess, <sup>3</sup>A Shaalan, <sup>1</sup>H Aly. <sup>1</sup>Newborn Services, The George Washington University Medical Center, Washington DC, USA; <sup>2</sup>Department of Global Health SPHHS, The George Washington University, Washington DC, USA; <sup>3</sup>President, National Research Centre, Cairo, Egypt

10.1136/archdischild-2014-307384.1196

**Background** Congenital and acquired infections not only play major role in neonatal mortality in Egypt, but also lead to significant morbidities and lifelong handicaps among Egyptian newborns.

**Objectives** 1) Develop research agenda to study neonatal infections and their impact on neonatal mortality and morbidities in Egypt. 2) Facilitate the assembly of multidisciplinary, multicenter research teams to examine the most critical questions on this agenda.

**Methods** Through collaboration with Egyptian National Research Centre, authors organised a four-day workshop in Cairo, Egypt, to facilitate the interaction of Egyptian and US experts to achieve above objectives. Authors invited neonatologists, obstetricians, and child health researchers from academic, governmental, and private sectors across the country. A call for abstracts invited participants to share their clinical and laboratory research. Leading neonatologists were invited to share their field experiences and case studies. Authors distributed participants into five diverse teams. Workshop activities included panel presentations, open discussions, and team focused-interactions. While discussing current and emerging aspects of neonatal infections and their impact on neonatal mortality and morbidities in Egypt, each team was tasked to develop research questions to study causes, predisposing factors, and intervention or prevention methods. Findings of each team were verified through whole group revisions. Using epidemiologic and clinical criteria, participants used simple voting to create a consensus on the most critical issues. Each team concluded the workshop by designing a framework for a research project to examine one of these issues.

**Results** More than forty neonatologists, paediatricians, child health researchers, and obstetricians joined the workshop. Sixteen abstracts were selected for presentation. Eighteen guest