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

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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

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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

speakers shared their experiences from Egypt and the US. Discussions focused on prenatal versus postnatal, early-onset versus late-onset, and hospital versus community acquired neonatal infections. Five topics represented high priorities for research in Egypt: 1) maternal vaginal colonisation patterns and maternal vaginal screening practices for common and emerging pathogens, 2) risk factors associated with hospital-acquired infections in delivery rooms and neonatal intensive care units, 3) antimicrobial resistance among pathogens affecting newborns in intensive care units, 4) education and compliance with infection control measures among staff, and 5) presentation and risk factors for neonatal infections associated with home deliveries. Webinar conferences will be conducted with each team to mature their project. A second workshop will be organised to develop a grant proposal for each research project to be submitted to international funding agencies.

Conclusion To address neonatal infections related mortality and morbidities, stakeholders involved in the care of the newborns in Egypt need to develop a prioritised future research agenda. A central taskforce need to facilitate the assembly of multicenter, multidisciplinary teams across the country to study these issues in collaboration with international expertise and funding resources.

PO-0555 PREDICTIVE VALUE OF ADMISSION SURFACE SWABS IN EARLY-ONSET NEONATAL SEPSIS IN EXTREMELY LOW BIRTH WEIGHT (ELBW) INFANTS IN A NEONATAL INTENSIVE CARE UNIT (NICU)

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10.1136/archdischild-2014-307384.1197

Introduction Early Onset Neonatal Sepsis (EONS) is a major contributor to morbidity and mortality in ELBW infants. Admission surface swab cultures (SSC) form part of admission surveillance cultures, however its place in the management of EONS is questionable.

Objective To determine:

- Sensitivity, specificity and positive predictive value of SSC.
- If culture result would reflect on mean CRP value in first 72 hrs.
- If maternal swabs and mode of delivery correlated with microbiological result in the baby.

Method

- Retrospective cohort study.
- All inborn ELBW infants admitted into a Level 3 NICU from January 2010–December 2013.
- Maternal swabs; mode of delivery; infants SSC, blood cultures and mean CRP (within 72 h) were reviewed.

Result

- 161 ELBW infants were admitted and all had admission SSC, CRPs and blood cultures.
- 25 of 161 (15.5%) had positive SSC (Figure 1) of which 5 were mixed culture results.
- 11 of 161 (6.8%) had EONS (positive blood cultures) (Table 1).
- 4 of 25 (16%) of positive SSC had correlating blood culture – all of which were E coli; 1 subject had positive SSC and blood culture but did not correlate.

Abstract PO-0555 Figure 1 Bacteria grown from skin swab

Abstract PO-0555 Table 1 Bacteria grown from initial blood cultures

Microorganism	n (%)
E coli	4 (36.3)
S aureus	1 (9.1)
Gram positive cocci	1 (9.1)
Group B streptococcus	1 (9.1)
Peptostreptococcus asaccharolyticus	1 (9.1)
Coagulase negative staphylococcus	3 (27.2)

Abstract PO-0555 Figure 2 Percentage of positive microbiological result for different mode of delivery

Abstract PO-0555 Table 2 Mean CRP for different microbiological result

Microbiological result	Mean CRP
Skin negative;Blood negative	5.8
Skin negative;Blood positive	9.3
Skin positive;Blood negative	17.2
Skin positive;Blood positive	15.0

F(3,10.164)=2.026, p = 0.173