

Background Neonatal septic shock is a devastating condition associated with high morbidity and mortality.

Methods A retrospective study was conducted in children's hospital Tunisian PICU between 2005 to 2013. All neonates (<28 days) treated for septic shock with bacterial proof were included. Nosocomial infection was an exclusion criteria. The chart review relieved demographics, length of stay, therapies and outcomes.

Results A total of 40 neonates were included. Mean age on admission was 34 h±3.7. Mean SNAPP score was 25 ± 17. Materno-fetal infection was observed in 37 cases, staphylococcal pneumonia in 2 cases and bacterial coinfection with bronchiolitis in the last case. The bacteriological study showed a notable predominance of streptococcus B (40%) and E.coli (35%). All patients required mechanical ventilation (mean duration: 85 ± 556 h) and haemodynamic support (mean duration 49 ± 335 h). Mortality rate was 19% in full term infants, 12.5% in near term infants and 27% in extremely preterm infants.

Conclusions Our results would indicate a high mortality rate in neonatal septic shock. A goal-directed therapy for septic shock, implanted in our PICU, could improve outcomes for this vulnerable population.

PS-214 DOES A TOTAL STERILE COLLECTION BUNDLE REDUCE FALSE POSITIVE BLOOD CULTURE RATES AND ANTIBIOTIC USE IN NEONATAL INTENSIVE CARE?

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Background and aim In neonatal intensive care coagulase negative *Staphylococcus* species can be both blood culture contaminant and pathogen. False positive cultures can result in clinical uncertainty and unnecessary antibiotic use. Our aim was to assess the effect of a total sterile blood culture collection bundle on the incidence of false positive blood cultures in a regional surgical neonatal intensive care unit.

Method Clinical data of all infants who had blood cultures taken before and after the introduction of the collection bundle (sterile technique and 2% Chlorhexidine) were collected. The rates of false positive blood cultures, defined as the presence of a skin commensal and <3 predefined clinical signs (Modi *et al.* 2009), were compared.

Results In total 367 blood cultures from 294 babies were assessed, 197 pre-intervention (PRE) and 170 following bundle introduction (POST). The median birth weight and gestation were similar in both groups. The rate of false positive cultures in the total PRE group was 9/197 (4.6%) compared to 1/170 (0.6%) in the POST group ($p < 0.05$). In infants <28 weeks' the rates reduced from 4/29 (13.8%) to 0/30 (0%) ($p < 0.05$). Unnecessary antibiotic exposure rate was 7.7% in the PRE group versus 0.0% in the POST group ($p < 0.05$).

Conclusion Implementation of this collection bundle reduced the number of false positive blood culture results. This has a potential benefit in reducing unnecessary antibiotic use and associated health care costs.

PS-215 SEPSIS REDUCTION CARE BUNDLES IMPROVE COGNITIVE OUTCOME IN VERY LOW BIRTH WEIGHT INFANTS

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Background Very low birth weight (VLBW) infants with late onset sepsis have increased risk of neurodisability. Care bundles to reduce these infections in NICU are effective. The impact of care bundles on long-term neurodevelopmental outcome has not been described. We aimed to determine if implementation of a sepsis-reduction care bundle was associated with improvement in neurodevelopmental outcomes in VLBW infants.

Methods A multimodal sepsis improvement bundle was implemented in a regional NICU from July 2006. This bundle focused on hand hygiene and line care improvements. Mortality and neurological morbidity rates were compared pre- and post intervention (Jan '01 - Dec '07 vs. Jul '08 - Dec '12). Infants had neurodevelopmental assessment at 24 months corrected gestation with Bayley Scales of Infant development. Moderate cognitive disability was defined as a cognitive/language score below 2SDs, moderate motor disability as a motor score below 2SDs.

Results Birth weight, gestation and gender were similar in both cohorts. Coagulase Negative *Staphylococcus* septicaemia rates reduced from 7/1000 care days before implementation to 2.8/1000 in 2012. Mortality rates were similar between the groups (66/426 vs. 40/310; $p = 0.3$). There was no difference in moderate motor disability (17/85 vs. 3/42; $p = 0.07$). There was a significant reduction in moderate cognitive disability (16/86 vs. 2/44; $p = 0.03$) after implementation of the sepsis care bundle.

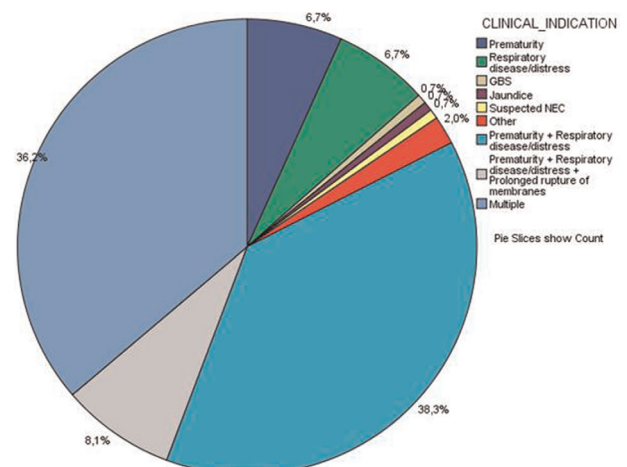
Conclusions Sepsis-reduction care bundles improve the 2-year neurodevelopmental outcome of VLBW infants. The improvement seen in cognitive function is likely to translate into significantly less long-term learning disability.

PS-216 MULTICENTRE PROSPECTIVE STUDY IN THE MANAGEMENT OF PRESUMED OR CONFIRMED EARLY ONSET SEPSIS AND INITIATION OF TREATMENT IN THE TERM AND PRETERM NEONATAL ADMISSIONS

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Aim To assess the choice of antibiotics in correlation to clinical management of suspected or confirmed early onset neonatal sepsis. To identify the requirement for updating our practice within the East of England Neonatal Network.



Abstract PS-216 Figure 1