Methods: Clinical characteristics, symptoms of sepsis and antibiotic use were studied retrospectively. Susceptibility of CONS blood isolates to cefazolin was determined by E-test.

Results: 163/185 infants with proven CONS sepsis were treated with cefazolin. Median MIC value of cefazolin was 0.75-2 (range 0.01-256) µg/ml and 77-96% of all isolates was susceptible to cefazolin (MIC ≤8 µg/ml) during 2000-2006. In 121/140 (86%) infants with cefazolin-susceptible and 21/23 cases (91%) with cefazolin-resistant CONS isolate cefazolin was clinically efficacious. 12/17 second blood cultures in 19 non-responders yielded CONS with unchanged MIC. In 78% of good responders and 22% of non-responders a central venous catheter was removed at onset of sepsis. Non-responders were switched to vancomycin.

Conclusions: Majority of CONS isolates remained susceptible to cefazolin over a period of 7 years. Cefazolin is clinically efficacious in >85% of cases and can be recommended as first choice agent for therapy of CONS sepsis. Removal of a central venous catheter may be the most important therapeutic measure.

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INVASIVE FUNGAL SEPSIS BEFORE AND AFTER INSTITUTION OF ANTIFUNGAL PROPHYLAXIS IN A TERTIARY NEONATAL UNIT - 10 YEAR OBSERVATIONAL STUDY

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Background and aims: Fungal sepsis (FS) is an important cause of morbidity and mortality in very low birth weight (VLBW) babies. The objective of our study was to review the cases of invasive fungal infection before and after starting antifungal prophylaxis (AFP) over a 10 year period.

Methods: Retrospective review of all cases of blood culture-positive fungal sepsis before AFP (January 1999 to December 2006) and after AFP (Jan 2007 to current)

Results: There were 12 cases of blood culture-positive fungal sepsis in the 7 year period before AFP. Age at diagnosis was < 14 days in 75% of cases. Fungi isolated were *Candida albicans* (75%), *Candida parapsilosis* (17%) and *Candida glabrata* (8%). Major risk factors for FS were

gestational age < 27 weeks, weight < 750g and preterm babies undergoing abdominal surgery for necrotising enterocolitis with the need for prolonged presence of central line.

AFP with fluconazole 3 mg/kg intravenously was commenced from Jan 2007 targeting high risk groups as above. In this period, there was expansion in cot capacity with 2614 admissions to our unit, of which 183 babies were either < 27 weeks or < 750g. Until now there have been no cases of FS in babies with strict adherence to the protocol. The only case of FS (*Candida albicans*) occurred on day 10 in a VLBW baby where fluconazole had not been administered as recommended.

Conclusion: AFP significantly reduces the incidence of invasive fungal infection in VLBW babies. We recommend their rational use targeting high risk babies as above.

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EPIDEMIOLOGY AND ANTIBIOTIC SUSCEPTIBILITY SPECTRUM IN UPEC FROM URINE IN CHILDREN SUSPECTED TO UTI IN MOFID CHILDREN HOSPITAL

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Introduction: Urinary tract infection due to UPEC with antibiotic resistance is one of the most important problems in infants and children. Prevalence of UPEC isolated from children urine samples and their antimicrobial susceptibilities were considered in this study .

Material and Methods: Urine samples of children who referred to Mofeed hospital were studied during one year. *E.coli* strains in these urine samples were identified by conventional methods. The Uropathogenic *E.coli* strains was confirmed by the gene including *by detecting papC, papGII, papGIII, sfa/foc, hlyC, c nf1, iucC, fyuA, iron N* genes by PCR method

Results: 12572 urine samples of suspected children to have urinary infections were studied and then 378 *E.coli* strains were detected in which 150 of strains were UPEC (39/7%). All of Uropathogenic *E.coli* were resistant to penicillin, Oxacillin, Bacit

racin, Cloxacillin and piperacillin resistant to other antibiotics were: Sulfamethoxazole 92%, Nalidixic acid 53%, Ampicillin 89%, Nitrofurantoin 9%, Cephalexin 55.3%, Cefixime 67%, Gentamicin 72%, Ciprofloxacin 17.5%

Conclusion: Periodic review and formulation of antibiotic policy are needed for control of acquisition of drug resistance. Further studies on better understanding of interaction of different virulence factors at molecular level are necessary as most urovirulent strain express multiple virulence factors simultaneously.

Key words : Uropathogenic E.coli ,Antibiotic susceptibility pattern, UTI

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DETECTION OF RESISTANCE TO CARBAPENEMS IN E.COLI AND KLEBSIELLA PNEUMONIA FROM URINE OF CHILDREN WITH UTI IN MOFEEED CHILDREN HOSPITAL

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Introduction and objectives: infection by Enterobacteriaceae which are resistant to carbapenems is challenging problem in health care centers. The correct monitoring of patients for treatment by carbapenems was one of the most significant considering in this study.

Methods: the urine samples of patients were gathered during six months. E.coli and Klebsiellae strains were detected. Susceptibility testings such determining of MIC and agar diffusion agar were performed for meropenem and imipenem for these strains and then carbapenemase coding gene detected by PCR method.

Results : 197 strains isolated from urine samples in which 138 E.coli and 58 Klebsiella pneumoniae were detected . 5 strains of E.coli (3.6 %) and 3 strains of Klebsiella (5.1%) were resistant to Imipenem and Meropenem and then kpc2 and kpc3 genes of their resistance were detected by PCR.

Conclusion: there is no any comprehensive program for screening of resistant strains of bacteria to carbapenems in our country and worldwide but epidemiologic increasing of these strains should be considered.

Key words: carbapenemase - E.coli - Klebsiella pneumoniae

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HAEMATOLOGICAL, C-REACTIVE PROTEIN AND PROCALCITONIN BEHAVIOUR IN NEONATAL SEPSIS

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Introduction: Neonatal sepsis remains a clinical diagnostic problem. This study analyses haematological, C-reactive protein (CRP) and procalcitonin (PCT) behaviour in different clinical settings of sepsis.

Methodology: Data from neonates diagnosed with sepsis were collected and analysed. PCT determined by VIDAS® BRAHMS PCT, CRP by Immunoturbidimetry and blood counts by Flow Cytometry.

Results: Out of 21 babies, 3 had positive blood cultures and, at the time of diagnosis, PCT was extremely high (64.68, 299.9 and 382.6 ng/mL; reference range: 0.05-5.89 ng/mL) and were thrombocytopaenic. Leucocytes and neutrophils were normal and CRP, with one exception, remained normal. Following antibiotics, PCT declined mirroring improved clinical course whilst the other parameters were generally uninformative. Ten babies with RDS and diagnosed sepsis were reviewed blindly and classified as unlikely; PCT remained either negative or increased slightly. The other parameters varied widely. Seven neonates with clinically compatible sepsis all showed raised PCT whilst the other parameters were indifferently normal or altered. One baby of 33 weeks GA deceased after severe RDS, thought to be infected, with all parameters altered, showed at *post-mortem* severe HMD only.

Conclusion: PCT was shown to be an early marker of confirmed sepsis and follow clinical course. When PCT remained negative or slightly raised sepsis was an unlikely diagnosis. In all those cases where sepsis was a likely possibility, although not confirmed, PCT was also considerably raised. PCT, in general, was a better indicator of sepsis present or absent. However, PCT may be altered in other situation and this needs investigating.