

Effects of Neonatal Septicemia on Renal Function

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ABSTRACT

An observational hospital based prospective study was conducted on 70 neonates with sepsis admitted in the Neonatology unit, Department of Paediatrics, MLB Medical College, Jhansi from Aug. 2016 to Sep. 2017 to evaluate the incidence of renal involvement in cases of neonates with septicemia and other contributing factors complicating acute kidney injury in them. Sepsis was diagnosed on the basis of either a positive sepsis screen [Immature: Total neutrophil ratio(I:T) > 0.2, micro –Erythrocyte Sedimentation Rate (ESR) > age in days +2 mm or >15 mm, C-Reactive Protein(CRP)> 1mg/dl, Total Leukocyte Count(TLC)<5000/ mm³ ; 2 or more positive)] or a positive blood culture in symptomatic neonates. Acute kidney injury (AKI) was diagnosed if the serum creatinine was >1.5mg/dL with or without oliguria and with or without blood urea nitrogen (BUN) >20mg/dl on two separate occasions at least 24 hours apart. Oliguria was diagnosed when urine output was less than 1ml/Kg/hr.

Out of the 70 neonates with sepsis, AKI was found in 23% (n=16) cases and majority of cases i.e. 75% (n=12) were nonoliguric, only 25% (n=4) were oliguric. The association of Shock, Prolonged Rupture of Membranes (PROM) and Foul Smelling Liquor (FSL) was also significant in neonates with AKI (68.75% vs 29.63%, p<0.05, 60% vs 40%, p<0.05, 100%, p<0.05 respectively). Perinatal asphyxia did not significantly increase the occurrence of AKI in septic neonates. The mortality was higher in neonates with oliguric AKI (75%) as compared to non oliguric AKI (41.66%). AKI occurred in 23% neonates with sepsis. It was observed that AKI secondary to neonatal sepsis was predominantly nonoliguric. Factors like shock, prolonged rupture of Membranes (PROM), foul smelling liquor (FSL) and culture positivity were significant risk factors for development of AKI in sepsis.