

Neonatal bacterial meningitis at the newborn unit of Kenyatta National Hospital

Abstract:

Meningitis occurs in up to one third of neonates with septicaemia. Diagnosis is difficult due to its non-specificity of signs and symptoms. While neonatal septicaemia is a common problem at Kenyatta National Hospital (KNH), there are no recent data on the incidence and clinical characteristics of neonatal meningitis at the hospital. **OBJECTIVE:** To evaluate the prevalence and the bacterial aetiology of meningitis in neonates at the Newborn Unit (NBU) of KNH. **DESIGN:** Descriptive cross-sectional study. **SETTING:** Newborn Unit of Kenyatta National Hospital, Nairobi, Kenya. **SUBJECTS AND METHODS:** Lumbar punctures were performed on eighty-four neonates with suspected sepsis based on specified clinical criteria. Cases were defined as meningitis if the cerebrospinal fluid (CSF) was positive for bacteria by Gram stain, aerobic bacterial culture or latex particle agglutination assay. **RESULTS:** The prevalence of meningitis amongst cases of suspected sepsis was 17.9%. The male:female ratio was 1.5:1 mean birth weight 2116.7 grams (1682.2-2551.2) mean gestational age 35.7 weeks (32.6-38.8) and the mean postnatal age was 4.1 days (2.7-5.4) with none of the parameters being significantly different from those without meningitis. Feed intolerance and lethargy were the most common clinical features, present in 73.3% and 60% of patients with meningitis respectively. Neonates with meningitis had a higher mean CSF protein value (2.67 g/L vs 1.97 g/L, $p=0.367$) and a significantly higher mean CSF white cell count (21 cells/mL vs 7 cells/mL, $p=0.001$). The most common aetiological agents were *Escherichia coli* (46.7%), Group B *Streptococci* (26.7%) and *Klebsiella pneumoniae* (13.3%). Most blood and CSF isolates were resistant to ampicillin and gentamicin but showed good in-vitro sensitivities to amikacin, cefuroxime and the third generation cephalosporins (ceftriaxone, ceftazidime and cefotaxime). Blood cultures were positive in only 53.3% of neonates with meningitis. **CONCLUSION:** Neonatal bacterial meningitis is an important clinical problem at KNH with a prevalence of 17.9% amongst cases of suspected sepsis. *E. coli* and Group B *Streptococci* were the most common aetiological pathogens. Blood cultures were negative in almost half of the patients with meningitis. Resistance to the commonly employed first-line antibiotics (penicillin and gentamicin) is high and a change of empirical antibiotic use for neonates with suspected sepsis is recommended.