Aetiology and clinical profile of acute bacterial meningitis in children less than 12 year admitted at a tertiary care hospital in North India

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Acute Bacterial meningitis (ABM) is amongst most common causes of morbidity & mortality in children in developing countries; delay in diagnosis and initiation of inappropriate antibiotics further adds to fatal outcome or long-term neurological sequelae. The present prospective observational study was conducted to know the etiology and epidemiologic risk factors associated with ABM among children in a tertiary care hospital of North India to ensure early and appropriate management. Out of total 225 patients enrolled, 118/225 patients fulfilled criteria of Nelson book of Pediatrics and WHO were enrolled in NICU (age group ranges from day 1 to ≤4 weeks), whereas 107/225 patients were enrolled from CHDS (age group ranges from> 4 weeks to 12 year); respectively. For each suspected case, demographic data, predominant clinical signs and symptoms, prior history of use of antimicrobial agent, and laboratory results was recorded in pre-designed questionnaire. CSF samples were subjected to direct wet mount, Gram staining and bacterial culture followed by Antimicrobial sensitivity testing (AST) by Kirby Bauer disk diffusion method and results were interpreted as per CLSI (2015). Mean age of both NICU and CHDS cases were 7±6.9 days and 4.94 ±3.3 years with female: male ratio as 1.87:1 and 1.60:1 respectively. In NICU patients, elevated CSF protein (>100mg/dl) was present in 31.3% and decreased CSF glucose (<40 mg/dl) were found in 61.8% whereas 80.5% had increased cell count and were significantly associated with culture positivity (p=0.001 and p= 0.008), respectively. Most common predisposing factors in mother was maternal fever (47.7%), leaky per vagina (40.9). Our result showed that *S. aureus*, *E. coli*, *Enterococcus faecali* and *CoNS* were highly predominat gram positive bacteria in children age >12 years followed by gram negative bacteria *Acinetobacter spp, Klebseilla pneumoniae, E. coli* and *Pseudomonas aerouginosa*. Proper vaccination for *N. Meningitides, S. Pneumoniae and H. Influenzae* type b in developing countries have shown the less predominancy of these pathogens isolated from ABM. Antibiotic suspetibility pattern of showed that *Gram positive cocci* were mostly sensitive to Vancomycin, linezolid followed by amikacin and gentamycin. All GNBs isolated in the present study were sensitive to colistin followed by meropenem and imipenem. Hence, this type of studies should be done on large scales to gather data for formulation of regional disease specific policies.

Biography

Jyotsna Agarwal is working in the area of patient care and diagnostics. Currently she is working as Head in the Department of Microbiology, Dr. Ram Manohar Lohia Institute of Medical Sciences. Her thrust areas of interest are sexually transmitted/ reproductive tract/urinary tract infections in women. Her other research interests are antimicrobial resistance in microbes, molecular diagnostics and focus areas have been infections of children like pneumonia, septicemia & meningitis. She has nearly 60 publications in indexed national and international journals and also worked as Editor and Reviewer for several reputed National and International journals. She took keen interest in "Hospital Infection Prevention, Control Practices and Antimicrobial stewardship Program" and provides advice on prevention of misuse of antimicrobials in hospital settings. An Annual newsletter from the Department of Microbiology, Dr. Ram Manohar Lohia Institute of Medical Sciences is published in her guidance, which contains antibiograms and other relevant information pertaining to infection control etc.

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