Visitor Restriction Policies and Practices in Children’s Hospitals: Results of an Emerging Infections Network Survey

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Epidemiology of Meningitis and Encephalitis in Infants and Children in the United States from 2011 to 2014

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Results. A total of 6,665 patients with meningitis or encephalitis were identified; 3,030 (45%) infants and 3635 (55%) children. Infants were more likely than children to be hospitalized (91.1% vs 76.3%; P < 0.01) and have lumbar puncture done as an inpatient (22.2% vs 17.0%; P < 0.01). Overall, the most common etiology was enterovirus (3892, 58.4%); followed by unknown (1546, 23.2%), bacterial meningitis (869, 13.0%), noninfectious (209, 3.1%), herpes simplex virus (HSV) (103, 1.5%), other viruses (47, 0.7%), arboviruses (36, 0.5%), and fungal (3, 0.03%). Overall, empirical antibiotics (97.7% vs. < 0.0001; P < 0.05) were more likely to be administered in infants than in children and the use varied by etiologies. Adjunctive steroids were utilized more frequently in children than in infants (11.8% vs. 3.6%, P < 0.0001). The overall median length of stay in infants and children was 3 and 2 days, respectively; the longest duration was seen in those infants and children with HSV (20 days/6.5days), and with bacterial meningitis (1 days/10 days), respectively. Overall, inpatient mortality and readmission rates were low (<1% in both infants and children).

Conclusion. Viruses are the most common cause of meningitis and encephalitis in infants and children and are treated with antibiotic therapy in the majority of cases.

Disclosures. R. Hasbun, BioMerieux: Consultant, Consulting fee; Biofire, Speaker’s Bureau, Speaker honorarium; Pfizer: Employee, Salary; S. Bozette, BioMerieux: Employee, Salary; C. Ginocchio, bioMerieux: Employee and Shareholder, Salary; Biofire Diagnostics: Employee, Salary

Quality of Life Following Childhood Bacterial Meningitis in Luanda, Angola

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Methods. Infants (<1 year old) and children (1–17 years) with meningitis or encephalitis by principal or secondary discharge ICD-9 diagnosis codes available in Premier Healthcare Database (PHD) during 2011−2014 were analyzed. PHD contains hospital discharge data including discharge diagnoses, diagnostic and treatment procedures, medications, and cost information from over 700 geographically diverse US hospitals. Descriptive statistics were used to describe the characteristics, etiologies, management decisions and outcomes of study population. Statistical comparisons were made between infants and children.

Results. A total of 6,665 patients with meningitis or encephalitis were identified; 3,030 (45%) infants and 3635 (55%) children. Infants were more likely than children to be hospitalized (91.1% vs 76.3%; P < 0.01) and have lumbar puncture done as an inpatient (22.2% vs 17.0%; P < 0.01). Overall, the most common etiology was enterovirus (3892, 58.4%); followed by unknown (1546, 23.2%), bacterial meningitis (869, 13.0%), noninfectious (209, 3.1%), herpes simplex virus (HSV) (103, 1.5%), other viruses (47, 0.7%), arboviruses (36, 0.5%), and fungal (3, 0.03%). Overall, empirical antibiotics (97.7% vs. < 0.0001; P < 0.05) were more likely to be administered in infants than in children and the use varied by etiologies. Adjunctive steroids were utilized more frequently in children than in infants (11.8% vs. 3.6%, P < 0.0001). The overall median length of stay in infants and children was 3 and 2 days, respectively; the longest duration was seen in those infants and children with HSV (20 days/6.5days), and with bacterial meningitis (1 days/10 days), respectively. Overall, inpatient mortality and readmission rates were low (<1% in both infants and children).

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Management of suspected serious bacterial infection (SBI) in infants less than 3 months old is a challenging task faced by all who care for neonates. Understanding the epidemiology of SBI is required to help guide management decisions. Recent publications have challenged the previously accepted distribution of infection by specimen source and identified pathogens.

Methods. We conducted a retrospective analysis of the Department of Defense (DOD) Military Health System (MHS) database to identify SBI cases among term infants less than 90 days of age born between January 1, 2005 and September 30, 2015. We defined an SBI case as any infant with positive cultures for an accepted pathogen from blood, urine or cerebrospinal fluid (CSF). Infants with multiple positive cultures represent a single case. Infants with meningitis or cranial meningoencephalitis were stratified by age and specified code.

Results. There were 678,214 live births during the study period. Out of 3496 infants with positive cultures, 1963 were excluded based on nonpathogenic isolates, and ICD-9 codes. Of the 1533 episodes of SBI there were 278 episodes of bacteremia, 57 of meningitis, and 1427 of urinary tract infection (UTI). The study period incidence was 2.3 cases/1000 live births. There was a significant trend down from 3.4 cases/1000 live births to 1.7 cases/1000 live births over the study period (P < 0.0001; Figure 1) which was primarily driven by decreasing Escherichia coli (E. coli) UTI. The most common pathogens were E. coli (52.1%), Group B Streptococcus (GBS) (8.0%), and Enterococcus (16.5%). E. coli accounted for 60.1% of UTIs, 10.5% of meningitis, and 19.8% of bacteremia. GBS accounted for 32.7% of bacteremia, 22.8% of meningitis, and 2.7% of UTIs. There were no cases of Listeria.

Conclusions. In this retrospective review of SBI in a large cohort of infants, the case incidence was found to be 2.3/1.000 live births. The most common pathogens were E. coli and GBS. Consistent with recent studies we found no cases of Listeria, however, GBS accounted for a higher percentage of bacteremia and meningitis cases. The significant downward trend in incidence over the study period warrants further investigation to assess possible ways to protect infants from this common source of morbidity and mortality.