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

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Journal Title: Open Forum Infectious Diseases
Volume: Volume 4, Number suppl_1
Publisher: Oxford University Press (OUP) | 2017-10-04, Pages S686-S686
Type of Work: Article | Final Publisher PDF
Publisher DOI: 10.1093/ofid/ofx163.1837
Permanent URL: https://pid.emory.edu/ark:/25593/s6g9w

Final published version: http://dx.doi.org/10.1093/ofid/ofx163.1837

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Accessed December 14, 2017 11:24 AM EST
2309. Epidemiology of Meningitis and Encephalitis in Infants and Children in the United States from 2011 to 2014
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Session: 251. Pediatric Potpourri
Saturday, October 7, 2017: 12:30 PM
Background. Large epidemiological studies evaluating the etiologies, management, outcomes and outcomes of infants and children with meningitis and encephalitis in the United States (US) are lacking.

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 Data, S. Duff (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 6,666 patients with meningitis or encephalitis were identified: 3,030 (45%) infants and 3,635 (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 (22.4% vs. 17.0%, P = 0.03). In total, the most common etiology was enterovirus (33.4%), followed by unknown (15.6%), bacterial meningitis (869, 13.0%), noninfectious (209, 3.1%), herpes simplex virus (HSV) (103, 1.5%), other viruses (47, 0.7%), arbovirus (36, 0.5%), and fungal (3, 0.03%). Overall, compared to infants, the following were more common in children: antibiotics on day of admission (40.2% vs 21.7%, P < 0.001) were more likely to be administered 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 < 0.001). 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/6.5 days), 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. Hashun, Biomerieux: Consultant, Consulting fee; Biofire: Speaker's Bureau, Speaker honorarium; Merck: Speaker's Bureau, Speaker honorarium; Pfizer: Speaker's Bureau, Speaker honorarium; Medicine's Co: Speaker's Bureau, Speaker honorarium; Honeywell: Health Care Consulting: Consulting, Consulting fee; S. Bozette, bioMérieux: Employee, Salary; C. Ginochio, bioMérieux: Employee and Shareholder, Salary; Biofire Diagnostics: Employee, Salary

2310. Quality of Life Following Childhood Bacterial Meningitis in Luanda, Angola
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Session: 251. Pediatric Potpourri
Saturday, October 7, 2017: 12:30 PM
Background. Survivors of childhood bacterial meningitis (BM) from low-income countries are at increased risk of sequelae. How BM survivors’ daily life is affected in the developing world, is not known. We aimed to investigate the quality of life among pediatric survivors of BM in Luanda, Angola assessing both physical and psychosocial health-related quality of life (HRQOL).

Methods. Survivors from two BM treatment trials (ISRCTN62824827; NCT01540838) from Luanda Children’s Hospital were called to follow-up visits in the developing world, is not known. We aimed to investigate the quality of life among pediatric survivors of BM in Luanda, Angola assessing both physical and psychosocial health-related quality of life (HRQOL).

Methods. Survivors from two BM treatment trials (ISRCTN62824827; NCT01540838) from Luanda Children’s Hospital were called to follow-up visits in the developing world, is not known. We aimed to investigate the quality of life among pediatric survivors of BM in Luanda, Angola assessing both physical and psychosocial health-related quality of life (HRQOL).

Results. One hundred and seventy (51%) of eligible respondents completed a survey between 12 July and 15 August 2016. Of these, 44 (27%) reported not knowing if their facility had a VRP and 17 (10%) reported having a policy but were unfamiliar with details; both groups were excluded from further analyses. 104 (61%) reported being somewhat familiar with the details of their VRP and 92 (58%) had a VRP in all inpatient units. Age based VRP were reported by 77/104 (74%), symptom-based by 101 (97%), and outbreak-specific by 78 (75%). VRP were also implemented in the emergency department by 5 (5%), outpatient clinic by 9 (9%), day surgery by 6 (6%), or radiology by 3 (3%). Symptom-based VRP were seasonal in 24 (24%) of facilities, with 71 (70%) implementation of VRP to familiy communication of VRP to families by 98 (99%), and with surgical care in care areas by 65 (64%). Communication of VRP to staff occurred by email for 79 (79%), by meetings for 56 (55%) and by signage in staff only areas for 50 (50%). Enforcement was the responsibility of nursing (82, 80%), registered nurses (42.4% vs 21.7%, P < 0.001) were more likely to be administered infants and children and the use varied by etiologies. Adjunctive steroids were utilized more frequently in children than in infants (11.8% vs. 3.6%, P < 0.001). 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/6.5 days), 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.

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2312. Epidemiology of Serious Bacterial Infections in a Cohort of Infants in the Military Health System from 2005 to 2015
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Session: 251. Pediatric Potpourri
Saturday, October 7, 2017: 12:30 PM
Background. Management of suspected serious bacterial infection (SBI) in infants less than 3 months old is a challenge faced by all who care for neonates. Surveillance of 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 congenital or perinatal infections were not considered. Descriptive analyses were performed.

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 2.3/1000 live births. There was a significant trend down from 3.4/1000 live births to 1.7/1000 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 (16.3%). 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 27.2% of UTIs. There were no cases of Listeria.

Conclusion. In this retrospective review of SBI in a large cohort of infants, the case incidence was found to be 2.3/1000 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.