2309. Epidemiology of Meningitis and Encephalitis in Infants and Children in the United States from 2011 to 2014

Rodrigo Hasbun, MD, MPH1; Ning Rosenthal, MD, MPH2; Joann-Miquel Balada-Clastat, PharmD, PhD3; Jessica Chung, Phd MPH1; Steve Duff, MS; Samuel Bozzette, MD PhD; Louise Zimmer, Research Coordinator2 and Christine Ginocchio, PhD MT1
Division of Infectious Diseases, University of Texas Health Science Center at Houston, McGovern Medical School, Houston, Texas, 1Premier Research, Charlotte, North Carolina, 2Clinical Microbiology, The Ohio State University Medical Center, Columbus, Ohio, 3Veritas,Carlsbad, California, bioMérieux, Durham, North Carolina

Session: 251. Pediatric Potpourri
Saturday, October 7, 2017: 12:30 PM

Background. Large epidemiological studies evaluating the etiologies, management, outcomes and outcome quality 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 Research Network during 2011-2014 were analyzed. PHID 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 (22.5% vs 17.0%, p < 0.05). Overall, the most common etiology was meningoencephalitis (36.4%, 58.4%); followed by unknown (15.46, 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. 93.7%, p < 0.01) and steroids were utilized more frequently in children than in infants (42.4% vs 21.7%, p < 0.001) 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. 3.63%, 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/6.6 days), and with bacterial meningitis (1 days/10 days), respectively. Overall, infant death and readmission rates were lower (<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, BioMérieux: Consultant, Consulting fee; Biofire, Speaker’s Bureau, Speaker honorarium; Merck: Speaker’s Bureau, Speaker honorarium; Pfizer: Speaker’s Bureau, Speaker honorarium; MedicineCo: Speaker’s Bureau, Speaker honorarium; S. Duff, Veritas: Health Economics Consulting: Consultant, Consulting fee; S. Bozzette, bioMérieux: Employee, Salary; C. Ginocchio, bioMérieux: Employee and Shareholder, Salary; Biofire Diagnostics: Employee, Salary

2310. Quality of Life Following Childhood Bacterial Meningitis in Luanda, Angola

Maria Karpinnen, MD1,2; Emilie Bugembara, MD1,2; Okko Savonius, MD1,2; Manuel Fiete Cruzeiro, MD1,2; Irmei Roinne, MD, PhD1; Heikki Peltona, MD, PhD; Professor3; and Tuula Pelkonen, MD, PhD1,2,3
1Children’s Hospital, Helsinki University Hospital, Helsinki, Finland, 2Faculty of Medicine, University of Helsinki, Helsinki, Finland, 3Pediatric Hospital Päitö Pedrino, Luanda, Angola, 4Faculty of Medicine, University of Porto, Portimao, Santiago, Chile

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; ISRCTN62824827; NCT01540838) from Luanda Children’s Hospital were called to follow-up visits in January 2017 with a median duration of 26 months after BM. We administered Pediatric Quality of Life Inventory (PedsQL25) 4.0 Generic Core Scales and Infant Scales, designed to measure HRQOL in children, to patients and/or parents. The generic core scales were administered to 64 and 32 families, and the infant scores to 8 and 3 care-givers. HRQOL can be measured reliably among BM patients in developing country setting.

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 (88%) 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%) implementing year-round. Communication of VRP to families occurred at admission to 11 (11%) and discharge to 146 (146) of all facilities. There were no cases of GBS accounted for 32.7% of bacteremia, 22.8% of meningitis, and 2.7% of UTIs. In this retrospective review of SBI in a large cohort of infants, the case fatality rate was 1427 of meningitis, and 1427 of urinary tract infection (UTI). The study period incidence was 4.0 generic core and infant scales than control children. HRQOL can be measured reliably among BM patients in developing country setting.

Conclusion. The survivors of pediatric BM endure a clearly suboptimal quality of life compared with siblings and other control children. HRQOL can be measured reliably among BM patients in developing country setting.

Disclosures. All authors: No reported disclosures.
Results. Records between 2014 and 2016 were reviewed identifying 43 children who met the inclusion criteria. The rate of infection was 3.39 per 1000 CL days. Younger age increased rate of BSI by 0.23/1000 CL days per year (95% confidence interval (CI): 0.14–0.32; P = 0.015) and shorter small bowel increased it by 0.27/1000 CL days for every 10-cm of small bowel (95% CI: 0.14–0.4; P = 0.045). Recent line breaks are important risk factor for BSI; an opportunity for prevention. BSI rates are higher in younger children likely due to immature bowel and/or difficult compliance with hygienic precautions handling CLs. No association was found between CL days and rate of BSI, which could guide the decision of CL removal or salvage.

Disclosures. All authors: no reported disclosures.

2315. Incidence and Outcomes of Endophthalmitis Associated Hospitalizations in Children Aged ≤ 20 Years: A Population-Based Cohort Study

Brett Edwards, MD; Vikram Lakshki, MD; Michael Parkins, MD and Ranjani Somayaj, MD. 1Department of Medicine, University of Calgary, Calgary, AB, Canada; 2Surgery, University of Calgary, Calgary, AB, Canada; 3Department of Medicine; Division of Microbiology & Infectious Diseases, University of Calgary, Calgary, AB, Canada; 4Department of Medicine; Division of Microbiology & Infectious Diseases, University of Calgary and Alberta Health Services - Calgary zone, Calgary, AB, Canada

Session: 251. Pediatric Potpourri
Saturday, October 7, 2017: 12:30 PM

Background. Endophthalmitis is a rare but sight-threatening condition in children, and is most commonly attributable to surgery, endogenous spread of infection, and trauma. Few population-based studies have examined the epidemiology and outcomes of neonatal and pediatric endophthalmitis.

Methods. Using the 2012 Kids' Inpatient Database, a stratified random sample of pediatric (≤20 years) discharges from community and non-rehabilitation hospitals in the US, we conducted a cohort study to examine the incidence and outcomes of endophthalmitis. The ICD9-CM search codes included 360.07, 360.13 and 360.19 for endophthalmitis. Our primary outcome was the incidence of endophthalmitis hospitalizations in children. Demographic sex, age, year and race were described. Compared (with death, length of stay (LOS in days), and total costs were described and compared (with death) between (<4 weeks) and pediatric cases.

Results. A total of 344 hospitalizations (58.1% male, median age 0 years (IQR 0–10 years) occurred for endophthalmitis corresponding to a national total of 478 cases at an incidence rate of 7.2 cases per 100,000 persons. Of these, 50.3% were neonatal endophthalmitis cases. Endophthalmitis was most common in the Caucasian (51.1%), Hispanic (21.9%) and Black (16.6%) races. The overall mortality was not significantly different between pediatric and neonatal cases (OR 1.46, 95% CI 0.24–8.90). For LOS, neonatal patients with ex & InfusPHILus I infections, significantly greater LOS by 14.30 days (95% CI 7.97–19.52, P < 0.001) compared with pediatric patients. Neonatal cases also had a significantly greater associated cost compared with pediatric cases (difference $77,626, 95% CI $16,703–$138,500, P = 0.01).

Conclusion. Our population-based study demonstrated that neonatal endophthalmitis was associated with similar incidence rates and mortality, but greater LOS and health care costs compared with pediatric endophthalmitis.

Disclosures. All authors: no reported disclosures.

2316. Fever in Infants: Assessing Variability in Sepsis Evaluation

Kathryn Schmit, MD; James Conway, MD FAAP; and Ann Allen, MD. University of Wisconsin Hospital & Clinics, Madison, Wisconsin, Wisconsin, Pediatrics, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin

Session: 251. Pediatric Potpourri
Saturday, October 7, 2017: 12:30 PM

Background. Fever is a common presentation of infants resulting in frequent medical visits. Since fever may be the sole sign of invasive bacterial infection (IBI) in infants less than 3 months of age, invasive testing is often performed. Many physicians are guided by standardized criteria, which were created to aid in determining those at low risk of IBI. Though these criteria exist, there is limited guidance regarding appropriate testing in the first month of life and wide variability in practice during the first 90 days. An American Academy of Pediatrics national quality improvement collaboration, Reducing Excessive Variability in Infant Sepsis Evaluation, is standardizing management of these infants.

This study evaluates current institutional practice in assessing febrile infants.

Methods. Retrospective chart review of all-appearing previously healthy term infants with no obvious source of fever on initial examination between the ages of 0–90 days presenting with documented or reported fever to either a tertiary emergency department or inpatient hospital, with specific Internal Constellation of Diseases codes over 1 year period. The infants were then separated into three groups: 0–28, 29–60 and 61–90 days.

Results. Of 83 infants meeting criteria, 10% had IBI with 75% of these being urinary tract infection. Evaluation should be standardized to include complete blood count (CBC), blood culture, urinalysis (UA) and urine culture varied between groups from 84%, 87% and 29% respectively. Within this latter group, 75% were underimmunized. CBC results were