**2281. Impact of the Introduction of the Haemophilus influenzae Type B Conjugate Vaccine in Southern India**

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**Background.** *Haemophilus influenzae* type b was the leading cause of bacterial meningitis in infants and children below the age of 2 years prior to the introduction of *H. influenzae* type b conjugate vaccines. In December 2011, the Indian government introduced *H. influenzae* b vaccine in the state of Tamil Nadu. Prospective surveillance for bacterial meningitis was established at the Institute of Child Health in Chennai to evaluate the etiology of meningitis and the impact of the vaccine.

**Methods.** Infants aged 1 to 23 months who were admitted to the hospital with symptoms of suspected bacterial meningitis were enrolled and lumbar puncture was performed. Cerebrospinal fluid samples were analyzed for white blood cells, protein, and glucose. Bacterial culture and a latex agglutination test for common bacterial pathogens were performed.

**Results.** Between January 2009 and March 2014, 4,770 children with suspected bacterial meningitis were enrolled. Prior to the introduction of the vaccine, an average of 11.7 cases of *H. influenzae* b meningitis and 31.1 cases of probable meningitis with no etiology were identified each year. After introduction, the number of cases was reduced by 79% and 44% respectively. The average *H. influenzae* b vaccine coverage after introduction was 69% among all children with clinically suspected meningitis. In contrast, the mean number of aseptic meningitis and pneumococcal meningitis cases remained stable throughout the pre and post vaccination period: 28.2 and 4.8 per year, respectively.

**Conclusion.** *H. influenzae* b conjugate vaccine reduced the number of cases of *H. influenzae* b meningitis and probable meningitis within the first two years of its introduction. The impact against meningitis was higher than the vaccination rate, indicating indirect effects of the vaccine. India has recently scaled up the use of *H. influenzae* b conjugate vaccine throughout the country which should substantially reduce childhood meningitis rates further in the country.

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**2282. Age-Stratified Analysis of Serotype-Specific Immunity Against Group B Streptococcus**

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**Background.** Development of group B streptococcus (GBS) vaccine is currently underway. In order to establish the immunization policy for the future, it is necessary to understand the basal immune level of risk groups in each country.

**Methods.** Thirty serum samples were collected from each risk group (neonates/infants, pregnant women and the elderly) between August 2016 and July 2017 at Korea University Guro hospital. Serotype-specific opsonic index (OI) was assessed using GBS multiplex opsonophagocytic killing assay (MOPA) against serotype Ia, III, and V, which are most prevalent worldwide.

**Results.** The mean age of neonates/infants, pregnant women, and the elderly was 1.3 months (range, 1–3 months), 31.9 years (range, 23–41 years) and 68.8 years (range 65–76 years), respectively. Baseline OI of each risk group measured by MOPA was shown in Table 1. The mean OI of serotype Ia was not significantly different among three risk groups (P = 0.156), but relatively lower in the neonates/infants group (mean ± standard deviation, 137 ± 278). For serotype III, the mean OI of neonates/infants (338 ± 625) was significantly lower compared with those of pregnant women (1,357 ± 1,167) and old adults (1,350 ± 1,741)(P = 0.002). Overall 66% of neonates/infants showed OI below 100. As for the serotype V, OI was particularly lower in neonates/infants (161 ± 445) compared with the elderly (3,669 ± 5,597) and pregnant women (9,414 ± 6,394) with statistically significant differences between three risk groups (P < 0.001).

**Conclusion.** Considering the relatively low OI of neonates/infants despite high maternal titer, intrapartum GBS vaccination might be required to ensure efficient placental transfer of serotype-specific GBS antibodies with high avidity.

**Table 1. Comparison of Baseline Ospionic Indexes Between Risk Groups: Mean Ospionic Indexes and 95% Confidence Intervals**

| Serotypes     | Groups                       | Ospionic Index (Mean) | 95% CI          | PValue |
|---------------|------------------------------|-----------------------|-----------------|--------|
| Ia            | Neonates/infants             | 137                   | 33–241          | 0.596  |
|               | Pregnant women               | 285                   | 17–562          |        |
|               | The Elderly                  | 231                   | 3–459           |        |
| III           | Neonates/infants             | 338                   | 105–670         | 0.002  |
|               | Pregnant women               | 1,377                 | 941–1,813       |        |
|               | The Elderly                  | 1,350                 | 700–2,000       |        |
| V             | Neonates/infants             | 161                   | 6–527           | <0.001 |
|               | Pregnant women               | 9414                  | 8,825–12,003    |        |
|               | The Elderly                  | 3,669                 | 1,579–7,579     |        |

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Background. Although Group B Streptococcus (GBS) has been recognized as an important cause of infections in adults, most studies have concentrated on patients with invasive disease. CDC estimates that there are >25,000 adult invasive cases in the United States/year. The objective of this study was to determine the burden of invasive and noninvasive GBS infections in hospitalized patients in Louisville, KY with the goal of determining the total burden of GBS infections in the United States.

Methods. We conducted a population-based, observational study of all hospitalized adults with GBS isolated from cultures and clinical evidence of active infection from 2014 to 2016 in a well-defined catchment area. Data regarding demographics, medical history, infection sites and microbiology were extracted from electronic medical records.

Results. Of 1428 GBS isolates 352 were considered colonizations therefore 1076 infections were included. Fifty-one percent were males and the median age was 52 years. Twenty-four percent were black and 2% Hispanic. Sixty-six percent presented from a nursing home. The median length of hospital stay was 5.2 days and 31% died. Patients had the following comorbidities: 627 (59%) diabetes, 220 (21%) renal disease, 221 (21%) coronary artery disease, and 154 (14%) vascular peripheral disease. In 642 patients (60%) GBS was the only organism isolated (monomicrobial) and in 320 (30%) GBS was isolated from more than one clinical site. Two hundred and twelve (20%) of patients had isolates from normally sterile sites (invasive). The primary site of infection included 425 (40%) soft tissue, 252 (24%) bone or joint, 115 skin and soft tissue, 271 (25%) respiratory, and 25 (2.3%) abdominal.

Conclusion. To our knowledge, this is the first study to determine the total burden of both invasive and noninvasive GBS disease among adult hospitalized patients in the United States. Our results suggest that only 20% of cases are invasive indicating that the burden of GBS is up to five times higher than estimates based on invasive infections.

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