

A 13-Year Review of Streptococcus pneumoniae Meningitis in Children

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Background: In 2004, the conjugate pneumococcal vaccine (PCV7) became part of the routine childhood immunization schedule for all children <2 years of age born on or after January 1, 2004 in Ontario. We reviewed all pneumococcal meningitis (PM) cases admitted to HSC between January 1, 1995 and December 31, 2007.

Method: Cases were identified through the TIBDN surveillance database, based on population-based surveillance for invasive pneumococcal infections in Toronto/Peel since 1995. These data were supplemented by retrospective chart review.

Results: 44 cases of PM were identified during the study period. Of 12 cases that occurred since January 2004 only 2 were born after January 1, 2004. The median age was 1.5 years (5 wks-17 yrs); 52% were male. 8 had underlying medical conditions. Initial presentation included septic shock (11), seizures (17) and altered level of consciousness (14); 14 required ICU admission. There were 4 deaths. Long-term sequelae included sensorineural hearing loss (13), hydrocephalus (8), focal motor deficits (9), seizure disorder (6) and cortical blindness (2). Three patients received cochlear implants. 21 (48%) had a normal outcome. *S. pneumoniae* was grown from blood & CSF in 20, CSF alone in 17 and blood alone in 7. 29 cases were caused by PCV7 serotypes. The most common serotypes were 19F (7), 23F (6) and 14 (5). 19A (non-vaccine) and 18C (vaccine) serotypes were implicated in the 2 children who had received PCV7. 11 were resistant to penicillin (MIC ≥ 0.12 $\mu\text{g/mL}$) and 2 were resistant to ceftriaxone (MIC ≥ 2 $\mu\text{g/mL}$).

Conclusions: Although there has been no noticeable decline in PM admissions over time, only 2 children admitted since January 2004 were eligible for PCV7 vaccine. A third of all cases were due to non-vaccine serotypes. The impact of PCV7 on PM disease burden in Ontario will require further study.

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