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Abstract (poster session)

Effects of childhood vaccination on serotype distribution and coverage of PCV13 among adults in Germany

M. van der Linden*, M. Imöhl (Aachen, DE)

Objectives: *Streptococcus pneumoniae* remains a leading cause of pneumonia, sepsis and meningitis and disproportionately affects young children and the elderly. The serotype distribution for invasive pneumococcal disease (IPD) among adults has always been different from that among children. In July 2006, vaccination with a pneumococcal conjugate vaccine was generally recommended by the German Health authorities for all children up to the age of 24 months. In this study, we report on the effects of childhood vaccination on the serotype distribution among adults with IPD (herd protection effect) and the implications on the current coverage of adult pneumococcal vaccines. **Methods:** The National Reference Center for Streptococci has monitored the epidemiology of IPD in adults in Germany since 1992. Cases of IPD in adults are reported by a laboratory-based surveillance system, including 265 laboratories throughout Germany. The present analyses include IPD documented between 1992 and 2011. Species confirmation was done by optochin testing and bile solubility testing. All isolates were serotyped using the Neufeld Quellung reaction. **Results:** Prior to the introduction of childhood vaccination (1992-2006), the most prevalent serotypes among adults with IPD were 14, 3, 7F, 4, 23F, 1 and 9V. In contrast, serotypes 3, 7F, 19A, 1 and 22F were most prevalent in the most recent season 2010-2011. While in the first period 40-45% of IPD among adults were caused by PCV7 serotypes, these serotypes were less detectable in the following years. In 2010-2011, only 11,8% were PCV7 serotypes indicating a herd protection effect among adults. The serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19F, 19A and 23F, covered by PCV13, caused 58,8% of all IPD cases 2010/2011 in Germany. **Conclusions:** Following the general recommendation for pneumococcal conjugate vaccination, a clear reduction in IPD was observed among children. The reduction of PCV7 serotypes among IPD in adults indicates a herd protection effect.