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ePoster Viewing

Vaccines for pneumococci, Haemophilus and meningococci

SEROTYPE DISTRIBUTION AND BURDEN OF PNEUMOCOCCAL DISEASE IN ADULTS IN GERMANY - REACHING THE LIMIT OF HERD PROTECTION?

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Objectives: *Streptococcus pneumoniae* remains a leading cause of pneumonia, sepsis and meningitis and disproportionately affects young children and the elderly. In July 2006, vaccination with pneumococcal conjugate vaccine was generally recommended in Germany for all children ≤ 24 months. In this study, we present the burden of disease and serotype distribution among adults with invasive pneumococcal disease (IPD) before and after the start of childhood vaccination.

Methods: The GNRCS 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 over 300 laboratories throughout Germany. The present analysis includes cases documented between 1992 and 2013. Species confirmation was done by optochin testing and bile solubility testing. All isolates were serotyped using the Neufeld Quellung reaction.

Results: Since 2006/2007 the amount of IPD isolates sent to the GNRCS has remained stable (2000-2300 per year). Before 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 2013-2014 serotypes 3, 19A, 12F and 22F were most prevalent. Before childhood vaccination 40-45% of IPD cases among adults were caused by PCV7 serotypes. After the start of childhood vaccination this percentage was gradually reduced to 6.8% in July-November 2013.

In 2009, higher valent vaccines (PCV10 and PCV13) were introduced among children. Among adults, a reduction of the percentage of IPD caused by the six additional serotypes from 47.1% in 2010-2011 to 36.1% in 2012-2013 was observed. First data for the 2013-2014 season (July-November 2013) indicate a further decrease to 30%. However, this decrease appears to be due to serotype 7F only. Serotypes 1, 6A and 19A do not seem to decrease further in 2013-2014. IPD due to Serotype 3 has remained stable since higher-valent vaccine introduction.

Serotypes 23B, 12F, 15A and 10A are strongly increasing among IPD in adults. Of these 23B shows the most significant trend and is often penicillin non-susceptible.

Conclusions: Although a herd protection effect of PCV7 and PCV13 was observed, the burden of IPD among German adults remains high, underlining the importance of individual vaccination. The herd effect is not the same for all serotypes and seems to persist for serotype 7F only.