Abstract (eposter session)

**Serotype distribution and vaccine coverage among pneumococcal disease in adults in Germany**

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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 serotype distribution among adults with IPD, bacteremic pneumococcal pneumonia and IPD with underlying conditions before and after the start of childhood vaccination. Methods: The National Reference Center for Streptococci has monitored the epidemiology of invasive pneumococcal disease (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 analysis includes cases documented between 1992 and 2012. Species confirmation was done by optochin testing and bile solubility testing. All isolates were serotyped using the Neufeld Quellung reaction. Results: 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 2011-2012 serotypes 3, 19A, 7F and 22F were most prevalent. Before childhood vaccination 40-45% of IPD cases among adults were caused by PCV7 serotypes. After vaccination this percentage was gradually reduced to 7.4% in 2011-2012. This indicates a herd protection effect among adults. In 2009, higher valent vaccination (PCV10 and PCV13) was introduced among children. Among adults, a reduction of the percentage of IPD caused by the six extra serotypes from 47.1% in 2010-2011 to 41.1% in 2011-2012 was observed. First data for 2012-2013 indicate a further decrease to 33%. In 2011-2012, the coverage of PPV23 among IPD in adults was 75.4%, coverage of PCV13 was 49.1%. In 1992-2006 the most prevalent serotypes among bacteremic pneumococcal pneumonia in adults were serotypes 14, 1, 4, 3, 7F and 9V. In 2011-2012 serotypes 3, 19A, 7F, 22F and 1 were most prevalent, and the coverages of PCV13 and PPV23 were 49.5% and 76.2%. Among patients with underlying conditions coverage of PCV13 was 39.2% (PPV23: 68.9%). Conclusions: The burden of IPD and pneumococcal pneumonia among German adults is high. A strong herd protection effect of PCV7 was observed. A similar herd protection effect of higher valent vaccination is becoming apparent. Coverage of both PCV13 and PPV23 are higher among IPD and bacteremic pneumonia than among patients with underlying conditions