Austria 2005-2010

Epidemiology of Invasive Pneumococcal



Disease

Figure 3: Distribution of Serotypes in Austria 2005-2010

m 2010

m 2009

13 2008

D2007

m 2006

IB 2005

17F

20

15B

12F

33F

Schmid2,

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Background

The National Reference Centre for Pneumococci (NRCM) was founded by the Ministry of Health in 2004. The NRCM collects data on cases of invasive pneumococcal disease (IPD) for annual analysis. The heptavalent pneumococcal vaccine (PCV/7) was introduced 2004 and is offered free of charge only to children in high-risk groups. The 23-valent polysaccharide vaccine (PPV23) is recommended for persons aged ≥ 65 years and older.

Methods

The IPD case definition is consistent with 2008/426/EG. The isolates referred to the NRCM are routinely serotyped by serumagglutination. The statistical analysis of seasonal and long term trends by the yearly incidence of invasive pneumococcal disease in Austria was done with regression analysis.

Results

From 2005-2010 the incidence of invasive pneumococcal disease (IPD) increased from 1.57 to 3.87 cases / 100,000 population(figure 1). The cases with the clinical manifestation meningitis decreased from 23.3% in 2005 to 15.1% in 2010. After low case fatality rates in the years 2005, 2006 and 2007 (2.4%, 3.9%, 3.6%), an abrupt rise was seen in 2008 (14.07% and 2009 (17.9%)(figure 1).

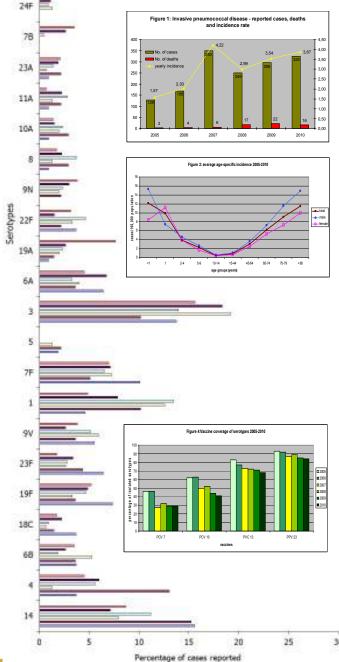
In 2010 the case fatality rate declined to 7.9%. The average age specific incidence shows in all years the typical international pattern with the highest incidence rates in the under one year and 80+ age groups (figure 2).

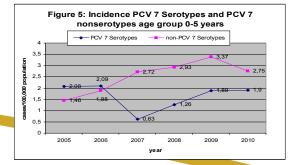
The lowest incidence was observed in the age group 10-14 years. Serotype data was available for 1168 invasive isolates. A total of 47 different serotypes were identified in 2010. The five most frequent serotypes were 3 (15.6 %), 14 (10,1 %), 1 (8.7 %), 7F (7,0 %) and 4 (5,6 %). All other serotypes were under 5%. The serotype fluctuation in the years 2005-2010 shows figure 3.

The from PCV/7 covered serotypes decreased from 46% (50/108) in 2005 to 16% in 2010 (48/291). The additional serotypes in PCV10, PCV13 and PPV23 showed only minimal fluctuations (figure 4). The non-vaccine serotypes increased from 7% (8/108) in 2005 to 15% (48/291) in 2010.

Conclusions

After introduction of PCV/7 an abrupt reduction of the incidence of IPD in the age group 0-5 years in 2006-2007 was registered. This was followed by a subsequent return to almost prevaccine levels in 2009-2010. In the 0-5 age group a steady rise in non-PCV7 serotypes from 2005 to 2010 and also a subtle recurrence of the PCV7 serotypes 2007-2010 is seen(figure5). These results must be interpreted with caution because the completeness of the serotype data and the sensitivity of laboratory surveillance varied in the years 2005-2010.





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