EVOLUTION FROM 2003 TO 2015 OF ANTIBIOTIC RESISTANCE AND SEROTYPE DISTRIBUTION OF PNEUMOCOCCUS ISOLATED IN INVASIVE PNEUMOCOCCAL DISEASE (IPD) IN FRANCE

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Objective. To evaluate trends in antibiotic resistance and serotype distribution in IPD, data from the French national survey program between 2003 and 2015 were analysed.

Methods. 24,907 Streptococcus pneumoniae were isolated from meningitis (2,500) and blood samples (22,407), in children (<16 year old) 2,864) and adults (22,043) from 2003 to 2015

- MICs of penicillin G (PEN), amoxicillin (AMX) and cefotaxime (CTX) were performed by agar dilution method, the decreased susceptibility was defined when MIC was > 0.06mg/L for penicillin G, > 0.5mg/L for amoxicillin and > 0.5mg/L for cefotaxime
- Serotyping of 9,231 strains (latex particles sensitized with antisera from Statens Serum Institute Copenhagen, Denmark)

Results. Evolution of IPD in children (n=2,864)

- No decrease of IPD after PCV-7 vaccination
- Significant decrease of meningitis and bloodstream infections in children after PCV-13 vaccination (-68% of IPD, p<0.05, 2009-2015)

Evolution of serotype distribution of IPD in children (n=1,861)

- Almost complete disappearance of PCV-7 serotypes (6.5% in 2015 vs 55.6% in 2003) except for serotype 19F
- Dramatic decrease of the 6 additional PCV-13 serotypes after vaccination (17.1% in 2015 vs 70.4% in 2009)
- Increase of non-vaccine serotypes particularly 12F, 24F (not PPSV23 serotype), 15B/C, 9N and 8

Evolution of antibiotic resistance

- Decrease in β-lactams resistance between 2003 and 2015
- Not significant increase of resistance to peni G in children between 2011 and 2015. Need to be monitored

Conclusion.

- Introduction of PCV-7 not followed by a decrease of IPD in France due to replacement by serotypes 19A and 7F
- Vaccination with PCV-13 rapidly followed by a decrease of IPD
- Decrease in β-lactams antibiotic resistance during the last decade

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