

Epidemiology and surveillance of meningococcal disease in Belgium

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Background

The Belgian Meningococcal Reference Centre has been producing statistics on invasive meningococcal disease since 1971. Between 1991 and 2001, an increase in incidence of meningococcal disease has been observed in Belgium. This increase was first associated with serogroup B but since 1997, the serogroup C incidence increased considerably and peaked in 2001. Health authorities launched an immunization campaign in late 2001 selecting as priority target the 1-5 years old and using serogroup C conjugate vaccine. Vaccination campaigns were organized at regional level and programmes differed between Flanders and Wallonia. In addition, the vaccine was included in the national vaccine calendar, to be administered at 12 months. Coverage rate was estimated at 82.5% in the 12-23 months in Wallonia, at 87% in pre-school children and at 93% in adolescents in Flanders (preliminary results from sample survey).

Methods

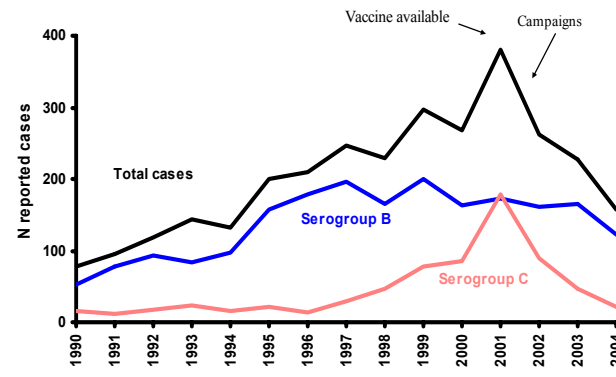
Data on meningococcal disease in Belgium are based on the mandatory notification to the regional health authorities and on data produced by the National Reference Centre at the Scientific Institute of Public Health. This centre receives isolates from peripheral laboratories (on voluntary base) for confirmation, serogrouping and serotyping. As it cover around 70% of notified cases and produces reliable and standardized data on serogroups and serotypes, national surveillance is based on its results. Only cases confirmed by culture are included in the surveillance.

Results

Trends from 2001 to 2004:

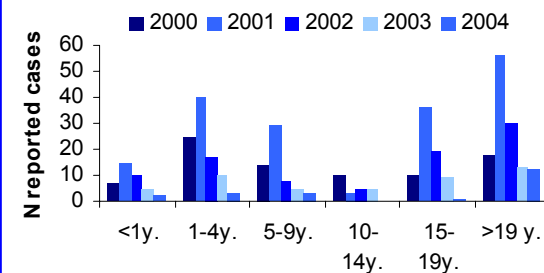
- The annual incidence rate of meningococcal disease fell from 3.7 to 1.5/100,000
- A 88% decline in serogroup C incidence (figure 1), from 1.7 to 0.2/100,000 was noted
- The proportion of serogroup C decreased from 49% to 14% of typed strains

Fig. 1: Invasive meningococcal disease, Belgium, 1990-2004
Data from the IPH Reference Laboratory



- The serogroup B incidence, stable in 2002-2003 decreased by 26% in 2004
- The proportion of serogroup B increased from 48% to 81% of typed strains
- Serotype 2a in serogroup C and serotype 4 in serogroup B remained the most common

Fig. 2: Serogroup C meningococcal disease
Time evolution per age group, 2000-2004



- In Flanders (where the 2001 peak was sharper, the campaign was longer and targeted also the 6-18 years) the decrease in serogroup C incidence was higher (-93%) than in Wallonia (-78%)
- The serogroup C decrease was observed in all age groups (figure 2):
 - 90% in the 1-5 years old nationally immunized
 - 98% in the 6-18 years old partly immunized (only in Flanders)
 - 78% in adults (>19 years) not immunized

Conclusions

The introduction of the vaccination has been followed by a significant decrease in serogroup C incidence, in the target age groups suggesting that the campaign was effective. An impressive decrease in non targeted age groups indicate that other factors may have played a role in the observed decline (natural decline of serogroup C, herd immunity).