

Meningococcal Disease in Denmark 2004

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Introduction

In Denmark both manifestations of meningococcal disease, meningitis and septicaemia, are notifiable. The notification system for communicable diseases is administered by the Department of Epidemiology (DE), and the Neisseria and Streptococcus Reference Laboratory (NSRL). The NSRL continuously refers information about each laboratory confirmed case to the DE. If the case has not yet been notified, the clinical department is reminded to notify the case.

Material

The material comprised all notified cases of meningococcal disease from 01.01.2004 to 31.12.2004. It was necessary to remind the clinical departments for 36 % of the notifications.

Results

- During the year 2004 100 cases were notified of which 79 (79 %) were confirmed by culture of *Neisseria meningitidis* (NM), 19 cases (19 %) were confirmed by microscopy or by detection of NM antigen or antibody, and two cases (2 %) were diagnosed on clinical grounds (**Figure 1**).
- The overall incidence rate of meningococcal disease was 1.9 per 100,000 population. The incidence rate of serogroup B disease was 1.1 and of serogroup C disease 0.3 per 100,000 population (**Figure 2**).
- The mortality rate was 6 %.
- A total of 58 cases (58 %) were due to serogroup B, and 14 (14 %) were due to serogroup C. There were two cases due to serogroup W135, none of which were acquired abroad, one case due to serogroup X, and three cases due to serogroup Y. The dominating phenotype was B:15:P1.7,16, sulphamethoxazole resistant (**Table 1**).
- There were no major differences in the geographical distribution. Age specific incidence rates for serogroups B and C in 2000, 2002, and 2004 are shown in **Figure 3**.
- On three occasions a secondary case was reported, all three due to serogroup B.
- The distributions of 70 NM strains of serogroups B and C by serotype and serosubtype are shown in **Tables 1 and 2**.
- Penicillin MIC values for 76 strains ranged from 0.016 to 1 mg/L, being 0.064 or 0.125 mg/L for 89 % of the strains (**Figure 4**).

Comment

The incidence of NM disease in Denmark in 2004 continued to be low (**Figures 1 and 2**), being 1.9 per 100,000 population as compared to 3.1 - 3.7 during 1981 through 1985, 4.2 - 5.6 during 1986 through 1997, and 3.0 - 3.5 during 1998 through 2001. The decrease affected children <10 years more than older individuals (**Figure 3**).

For example the incidence of group B infections in infants decreased from 24.1 in 2000 to 10.8 per 100,000 population in 2004. The decline was most pronounced for serogroup B and it was especially evident for the phenotype 15:P1.7,16. The relative frequency of this phenotype within serogroup B decreased from 49 % in 2001 to 39% in 2004.

Conclusions

- The incidence of meningococcal disease in Denmark remained at the same low level in 2004 as in the previous two years.
- The incidence of serogroup C remained low too.

Figure 1. Meningococcal disease in Denmark 1980-2004. Total number of notified cases, number of cases verified by culture and total incidence rates per 100,000

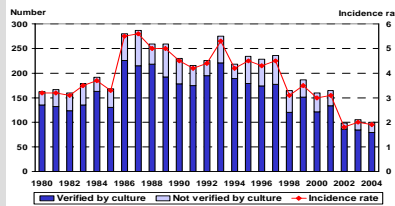


Figure 2. Meningococcal disease in Denmark 1980-2004. Incidence rates per 100,000 for total number of notified cases and cases due to serogroups B and C

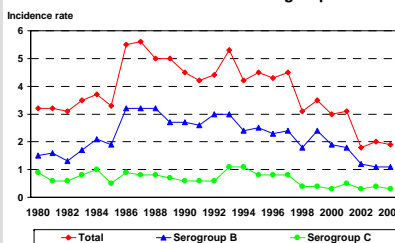


Figure 4. Penicillin MIC among meningococci, Denmark 1998-2004

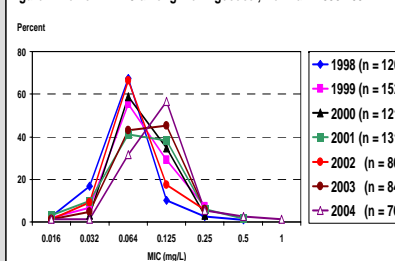


Figure 3. Meningococcal disease in Denmark 2000, 2002, and 2004. Age specific incidence rates per 100,000; serogroups B and C

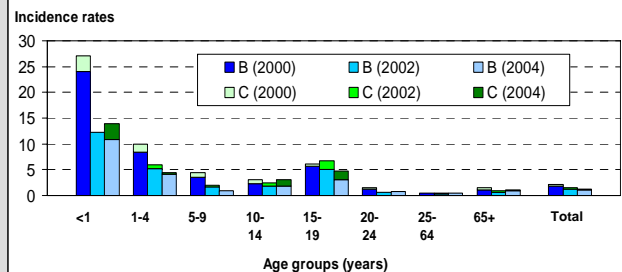


Table 2. *N. meningitidis* serogroup B: Serotypes and serosubtypes, Denmark 2004

Serotypes	Serosubtypes										N-ST	Total	
	P1.1	P1.4	P1.9	P1.14	P1.15	P1.16	P1.2,5	P1.3,6	P1.7,13	P1.7,16			
1	-	-	-	3	2	1	-	-	-	-	-	-	6
4	-	1	-	1	6	-	-	-	-	2	-	1	11
14	-	-	-	-	1	-	-	-	-	3	1	-	5
15	-	-	-	-	-	1	2	-	1	22	-	1	27
NT	1	1	2	1	-	-	-	1	-	1	-	-	7
Total	1	2	2	5	9	2	2	1	1	28	1	2	56

Table 2. *N. meningitidis* serogroup C: Serotypes and serosubtypes, Denmark 2004

Serotypes	Serosubtypes					N-ST	Total
	P1.5	P1.7	P1.15	P1.1,7	P1.2,5		
2a	1	-	-	-	-	-	2
2b	1	-	-	-	-	1	3
4	-	-	1	1	-	-	2
15	-	3	-	-	-	-	3
NT	-	-	-	-	-	-	-
Total	2	3	1	1	1	6	14