

MENINGOCOCCAL DISEASE 2009

No. 17, 2010

In Denmark, invasive meningococcal disease (MD) is monitored via the clinical notification system as well as via the Neisseria Reference Laboratory which receives meningococcal isolates from Danish clinical microbiology departments.

In 2009 the Department of Epidemiology was notified of 73 cases of invasive MD. A notification reminder was necessary in 23 cases. [Table 1](#) shows the distribution by region and area.

Table 1. Notified cases of invasive meningococcal disease in 2009. Number and incidence per 10⁵, by region and area

Region & area	No.	Incidence
Capital		
Cph. City	7	1.0
Cph. Suburbs	5	1.0
North Zealand	3	0.7
Bornholm	1	2.3
Zealand		
East Zealand	0	-
W & S Zealand	6	1.0
South Denmark		
Funen	9	1.9
South Jutland	9	1.3
Central Jutland		
East Jutland	14	1.7
West Jutland	9	2.1
North Jutland		
North Jutland	10	1.7
Total	73	1.3

Diagnosis

Among the 73 cases, 30 had meningitis, 25 septicaemia and 17 both meningitis and septicaemia, while one patient had septic arthritis. A total of 40 (55%) cases were diagnosed with MD serogroup B, 22 (30%) with serogroup C and five (7%) with serogroup Y. In six (8%) cases, the serotype was unknown. No group A or W135 cases were reported.

[Table 2](#) shows the distribution by age groups.

In a total of 60 (82%) of the notified cases, meningococcal culture was positive. In seven cases, the diagnosis was based on PCR, and four patients had a positive meningococcal antibody titre (MAT). In two cases, the diagnosis was based exclusively on clinical manifestations.

A total of 70 cases were believed to have become infected in Denmark, one abroad, and in two cases the country of infection was unknown. All patients were Danes.

Case clusters

2009 saw two minor group C out-

Table 2. Cases notified with invasive meningococcal disease in 2009, by age, serogroup, M/F ratio, incidence per 10⁵ and number of deaths

Age (yrs)	B	C	Y	Unknown	Total	M/F-ratio	Incidence	Deaths
< 1	8	2	0	1	11	4.5	16.8	0
1-2	3	4	1	1	9	0.8	6.8	0
3-6	9	5	0	2	16	1.3	6.1	0
7-13	3	0	0	0	3	2.0	0.6	0
14-17	9	1	1	0	11	0.9	3.9	0
18-29	4	4	1	1	10	1.5	1.3	0
30-39	1	0	0	0	1	-	0.1	0
+ 40	3	6	2	1	12	0.7	0.4	2
Total	40	22	5	6	73	1.2	1.3	2

breaks: A nursery with two cases of MD and an agricultural college, at which two students had MD.

Sequelae

Two patients (3%) died from MD. One patient, a nursing home resident with an acquired immunodeficiency, was 80 years old and had septicaemia caused by serogroup C. The other patient, aged 57 years, was found dead at home and notified with meningitis and septicaemia. The autopsy showed serogroup B meningococci in the cerebrospinal fluids.

Among the surviving 71 patients, notification of sequelae was made in eight cases: amputation of both lower legs, epilepsy, unilateral hearing-loss, headache/fatigue, two cases of ataxia and two cases of skin necrosis.

Notification

Notification should be done by phoning the Medical Public Health Officer on duty immediately when suspicion of MD arises; furthermore, form 1515 should be filled in.

Prophylaxis to contacts

Close contacts to patients with suspected or verified MD are offered prophylactic antibiotics and in some cases vaccination. A close contact is any person who has stayed the night (same house or flat) with the patient within 10 days of disease onset or who have an intimate "kissing relationship" with the patient. Patients are offered prophylaxis at the discretion of the Medical Officer of Health, who may choose to include more persons on concrete assessment. Furthermore, it is the competence of the Medical Officer to decide if emergency call services, institutions, etc. should be informed.

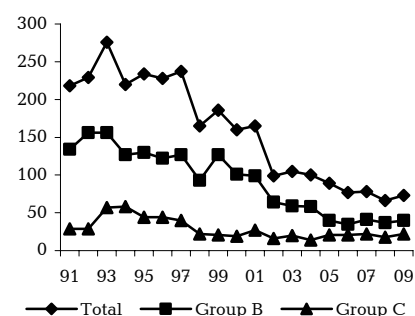
Vaccines are available for serogroups A, C, W135 and Y, but not for B which is the most frequently occurring serogroup in Denmark. Once the serogroup is determined, the

Medical Officer decides on the issue of vaccination. The relevant persons will receive written notification. The person's GP orders the vaccine from the SSI and performs the vaccination. Vaccination is free of charge.

Commentary

The number of MD cases was slightly above that observed in 2008, when the lowest number of registered cases since MD became notifiable in 1980 was recorded, but in line with the number of cases observed in 2006 and 2007, EPI-NEWS 15-16/09. As from 1993, an overall decrease in the number of MD cases has been seen. The decrease is primarily due to a decrease in MD of serogroup B, while the number of serogroup C cases has remained stable since 1997, [Figure 1](#).

Figure 1. Notified cases of meningococcal disease, 1991-2009



Two MD deaths occurred in 2009, which is the lowest number since monitoring was initiated. As previously, the bulk of cases occurred in children below the age of 7 years and in teenagers aged 14-17 years. Apart from a slight 2009 increase in MD on Funen, the overall distributions on sex, serogroup and clinical presentation were comparable to those observed in 2008. (M. Nørgård, P. Valentiner-Branth, Dept. of Epidemiology, L. Lambertsen, Dept. of Microbiol. Surv. & Research)

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2010 figures are preliminary)

Table 1	Week 16 2010	Cum. 2010 ¹⁾	Cum. 2009 ¹⁾
AIDS	0	17	8
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	5	3
Diphtheria	0	0	0
Food-borne diseases	11	74	125
of these, infected abroad	1	21	21
Gonorrhoea	1	159	175
Haemorrhagic fever	0	0	0
Hepatitis A	0	13	9
of these, infected abroad	0	5	5
Hepatitis B (acute)	0	12	10
Hepatitis B (chronic)	1	66	71
Hepatitis C (acute)	0	0	2
Hepatitis C (chronic)	8	155	118
HIV	3	80	88
Legionella pneumonia	3	38	32
of these, infected abroad	0	5	3
Leprosy	0	0	0
Leptospirosis	0	0	0
Measles	0	3	9
Meningococcal disease	1	25	33
of these, group B	0	3	9
of these, group C	0	6	3
of these, unspec. + other	1	6	0
Mumps	0	3	4
Neuroborreliosis	0	6	3
Ornithosis	1	6	0
Pertussis (children < 2 years)	3	30	38
Plague	0	0	0
Polio	0	0	0
Pneum. disease, invasive (IPD) ²⁾	4	54	49
Purulent meningitis			
Haemophilus influenzae	0	0	3
Listeria monocytogenes	0	2	2
Other aethiology	1	6	6
Unknown aethiology	0	0	1
Under registration	0	0	0
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	32	35
of these, infected abroad	0	20	31
Syphilis	3	106	88
Tetanus	0	0	0
Tuberculosis	14	113	127
Typhoid/paratyphoid fever	1	15	7
of these, infected abroad	0	11	6
Typhus exanthematicus	0	0	0
VTEC/HUS	6	42	33
of these, infected abroad	1	10	7

¹⁾ Cumulative number 2010 and in corresponding period 2009

²⁾ Meningitis, all age groups, invasive pneumococcal disease < 5 years

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 16 2010	Cum. 2010 ³⁾	Cum. 2009 ³⁾
Bordetella pertussis (all ages)	4	47	45
Gonococci	1	154	129
of these, females	1	44	30
of these, males	0	110	99
Listeria monocytogenes	-	16	17
Mycoplasma pneumoniae			
Resp. specimens ³⁾	0	35	26
Serum specimens ⁴⁾	0	80	52
Streptococci ⁵⁾			
Group A streptococci	4	63	69
Group B streptococci	2	37	30
Group C streptococci	0	13	10
Group G streptococci	3	47	51
S. pneumoniae	27	434	510

Table 3	Week 14 2010	Cum. 2009 ³⁾	Cum. 2008 ³⁾
MRSA	10	211	195
Pathogenic int. bacteria ⁶⁾			
Campylobacter	27	609	438
S. Enteritidis	14	80	64
S. Typhimurium	14	96	255
Other zoon. salmonella	13	147	177
Yersinia enterocolitica	5	41	56
Verocytotoxin-producing E. coli	4	44	32
Enteropathogenic E. coli	3	44	32
Enterotoxigenic E. coli	3	127	61

³⁾ Cumulative number 2010 and in corresponding period 2009

⁴⁾ Resp. specimens with positive PCR

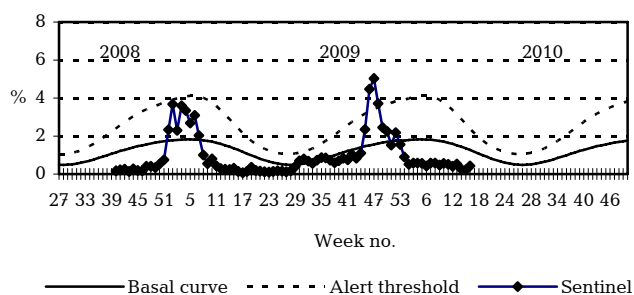
⁵⁾ Serum specimens with pos. complement fixation test

⁶⁾ Isolated in blood or spinal fluid

⁷⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2008/2009/2010



Sentinel: Influenza consultations (as percentage of total consultations)

Basal curve: Expected frequency of consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic