



MENINGOCOCCAL DISEASE 2008

No. 15/16, 2009

The Department of Epidemiology received 66 notifications of meningococcal disease (MD) with onset in 2008. [Table 1](#) shows the distribution by part of country.

Table 1. Notified meningococcal disease cases in 2008. No. and incidence per 10⁵ by area

| Area | No. | Incidence |
|-------------------------|-----------|------------|
| Capital | | |
| Copenhagen city | 5 | 0.8 |
| Copenhagen subs | 5 | 1.0 |
| Northern Zealand | 2 | 0.5 |
| Bornholm | 1 | 2.3 |
| Zealand | | |
| Eastern Zealand | 2 | 0.9 |
| W & S Zealand | 7 | 1.2 |
| Southern DK | | |
| Funen | 4 | 0.8 |
| Southern Jutland | 7 | 1.0 |
| Central Jutland | | |
| Eastern Jutland | 14 | 1.7 |
| Western Jutland | 7 | 1.6 |
| Northern Jutland | | |
| Northern Jutland | 12 | 2.1 |
| Total | 66 | 1.2 |

Among the 66 cases, 18 had meningitis, 23 septicaemia, 24 meningitis as well as septicaemia and one patient had septic arthritis. As previously, the incidence was highest in the younger age-groups, [Table 2](#).

Diagnosis

In 58 (88%) of the notified cases, culture of *Neisseria meningitidis* was positive, including 36 serogroup B, 18 C, two W135, and two Y.

In six cases, meningococci were determined by polymerase chain reaction (PCR) of blood or cerebrospinal fluid (CSF); five of the cases were also culture-positives, while one group-B case was only diagnosed by PCR. The seven cases which were neither determined by culture nor PCR presented with symptoms compatible with invasive MD. Two of the seven had positive meningococcal antibody test (MAT) and in one case, gram-negative diplococci were detected by positive CSF microscopy. According to the notification, four cases were probably infected abroad, including one with W135 in France and three with group B in Spain, Norway and Turkey, respectively. No cases associated with countries outside Europe were reported.

Sequelae

Five cases (8%) died; all five had septicaemia, and three also had meningitis. Among the 61 survivors, information regarding sequelae was available for 48, among whom 44 (72%) had no signs of sequelae,

Table 2. Patients notified with meningococcal disease in 2008, by age, serogroup, M/F ratio, incidence per 10⁵ and number of deaths

| Age (yrs) | B | C | W135 | Y | Unknown | Total | M/F ratio | Incidence | Deaths |
|--------------|-----------|-----------|----------|----------|----------|-----------|------------|------------|----------|
| < 1 | 11 | 0 | 0 | 0 | 2 | 13 | 1.6 | 20.0 | 1 |
| 1-2 | 5 | 2 | 0 | 0 | 1 | 8 | 1.0 | 6.1 | 1 |
| 3-6 | 5 | 0 | 1 | 0 | 1 | 7 | 0.8 | 2.7 | 0 |
| 7-13 | 2 | 3 | 0 | 0 | 1 | 6 | 0.5 | 1.2 | 0 |
| 14-17 | 6 | 4 | 0 | 0 | 0 | 10 | 2.3 | 3.6 | 1 |
| 18-29 | 5 | 2 | 0 | 0 | 2 | 9 | 0.8 | 1.2 | 0 |
| 30-39 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0.0 | 0 |
| + 40 | 3 | 7 | 1 | 2 | 0 | 13 | 0.9 | 0.5 | 2 |
| Total | 37 | 18 | 2 | 2 | 7 | 66 | 1.1 | 1.2 | 5 |

while two had skin necrosis, one reactive arthritis and one suffered from double vision and headaches for an extensive period of time.

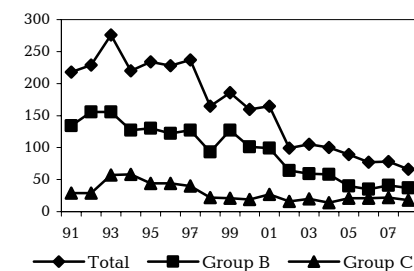
Clusters

Two pupils from the same boarding school presented with symptoms at a three-day interval, both group B. One of the pupils died. All pupils and staff at the school received antibiotic prophylaxis.

Commentary

MD occurrence in DK is followed via the clinical notification system as well as via the *Neisseria* Reference Laboratory which receives meningococcal isolates from all Danish clinical microbiology departments. 2008 saw a continuation of the decreasing trend in the number of notified cases observed since 1993, [Figure 1](#).

Figure 1. Notified cases of meningococcal disease 1991-2008



The number of notified cases was the lowest observed since the disease became notifiable in 1980.

The *Neisseria* Reference Laboratory also receives fewer isolates, and it is estimated that the observed decrease is due to a real tendency rather than to lack of notification, EPI-NEWS 12/06. Culture-positive and PCR-verified and clinically suspected cases of meningococcal meningitis and septicaemia are notifiable. Notification should be done by phoning the Medical Public Health Officer on duty immediately as suspicion arises; furthermore, form 1515 should also be filled-in for written notification. In 13 culture-verified cases from 2008, reminders were sent to the

treating departments, 11 cases have subsequently been notified. Furthermore, in another four cases, which were diagnosed in the laboratory by PCR, notification is currently outstanding.

Prophylaxis to contacts

Close contact to patients with suspected or verified MD should be offered antibiotic prophylaxis and possibly vaccination. Anyone who has stayed the night with infectees (same house or flat) 10 days prior to symptom onset and anyone who has intimate kissing relationships in said period is a close contact. The risk of health and ambulance professionals is not increased and these groups are not offered prophylaxis. Antibiotic prophylaxis should be initiated immediately on suspicion. Delimitation of the relevant group of persons is performed in consultation with the Medical Public Health Officer on duty, who – as mentioned above – should be contacted by phone by the treating physician. Once the serogroup is determined, the issue of vaccination is decided upon. Vaccines are available for serogroups A, C, W135 and Y, but not for B which is the most frequently occurring in Denmark. Vaccination is offered to the same group of persons which are offered antibiotic prophylaxis and these persons will be contacted by the medical officer. The actual vaccination takes places at the patients' GP who may order the vaccine from the Department of Epidemiology, SSI, free of charge. Where special conditions apply, the medical officer may decide to offer antibiotics and or vaccination to a wider circle of persons than described above. Furthermore, it is the competence of the medical officer to decide if emergency call services, institutions, etc. should be informed.

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2009 figures are preliminary)

| Table 1 | Week 15 2009 | Cum. 2009 ¹⁾ | Cum. 2008 ¹⁾ |
|--------------------------------|-----------------|----------------------------|----------------------------|
| AIDS | 0 | 7 | 12 |
| Anthrax | 0 | 0 | 0 |
| Botulism | 0 | 0 | 0 |
| Cholera | 0 | 0 | 0 |
| Creutzfeldt-Jakob | 1 | 6 | 1 |
| Diphtheria | 0 | 0 | 0 |
| Food-borne diseases | 5 | 114 | 79 |
| of these, infected abroad | 1 | 22 | 23 |
| Gonorrhoea | 7 | 163 | 110 |
| Haemorrhagic fever | 0 | 0 | 0 |
| Hepatitis A | 1 | 9 | 15 |
| of these, infected abroad | 0 | 5 | 7 |
| Hepatitis B (acute) | 0 | 9 | 5 |
| Hepatitis B (chronic) | 0 | 56 | 49 |
| Hepatitis C (acute) | 0 | 4 | 4 |
| Hepatitis C (chronic) | 6 | 107 | 107 |
| HIV | 0 | 74 | 60 |
| Legionella pneumonia | 0 | 34 | 30 |
| of these, infected abroad | 0 | 4 | 12 |
| Leprosy | 0 | 0 | 0 |
| Leptospirosis | 0 | 0 | 2 |
| Measles | 0 | 9 | 6 |
| Meningococcal disease | 0 | 23 | 23 |
| of these, group B | 0 | 12 | 10 |
| of these, group C | 0 | 8 | 4 |
| of these, unspec. + other | 0 | 3 | 9 |
| Mumps | 0 | 3 | 14 |
| Neuroborreliosis | 0 | 3 | 19 |
| Ornithosis | 0 | 0 | 1 |
| Pertussis (children < 2 years) | 3 | 36 | 32 |
| Plague | 0 | 0 | 0 |
| Polio | 0 | 0 | 0 |
| Purulent meningitis | | | |
| Haemophilus influenzae | 0 | 2 | 0 |
| Listeria monocytogenes | 0 | 2 | 1 |
| Streptococcus pneumoniae | 0 | 28 | 35 |
| Other aethiology | 0 | 3 | 11 |
| Unknown aethiology | 0 | 3 | 11 |
| Under registration | 6 | 22 | - |
| Rabies | 0 | 0 | 0 |
| Rubella (congenital) | 0 | 0 | 0 |
| Rubella (during pregnancy) | 0 | 0 | 0 |
| Shigellosis | 1 | 28 | 19 |
| of these, infected abroad | 1 | 26 | 17 |
| Syphilis | 7 | 76 | 33 |
| Tetanus | 0 | 0 | 0 |
| Tuberculosis | 3 | 117 | 116 |
| Typhoid/paratyphoid fever | 0 | 6 | 9 |
| of these, infected abroad | 0 | 3 | 7 |
| Typhus exanthematicus | 0 | 0 | 0 |
| VTEC/HUS | 1 | 32 | 35 |
| of these, infected abroad | 1 | 8 | 12 |

¹⁾ Cumulative number 2009 and in corresponding period 2008

Selected laboratory diagnosed infections

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

| Table 2 | Week 15 2009 | Cum. 2009 ²⁾ | Cum. 2008 ²⁾ |
|--|-----------------|----------------------------|----------------------------|
| Bordetella pertussis (all ages) | 4 | 43 | 37 |
| Gonococci | 3 | 114 | 115 |
| of these, females | 2 | 27 | 24 |
| of these, males | 1 | 87 | 91 |
| Listeria monocytogenes | 1 | 16 | 10 |
| Mycoplasma pneumoniae | | | |
| Resp. specimens ³⁾ | 0 | 24 | 38 |
| Serum specimens ⁴⁾ | 1 | 48 | 45 |
| Streptococci ⁵⁾ | | | |
| Group A streptococci | 0 | 60 | 48 |
| Group B streptococci | 0 | 27 | 30 |
| Group C streptococci | 0 | 8 | 4 |
| Group G streptococci | 0 | 42 | 36 |
| S. pneumoniae | 19 | 480 | 414 |
| Table 3 | Week 13 2009 | Cum. 2009 ²⁾ | Cum. 2008 ²⁾ |
| MRSA | 11 | 188 | 142 |
| Pathogenic int. bacteria ⁶⁾ | | | |
| Campylobacter | 25 | 391 | 434 |
| S. Enteritidis | 4 | 54 | 70 |
| S. Typhimurium | 10 | 229 | 96 |
| Other zoon. salmonella | 13 | 165 | 180 |
| Yersinia enterocolitica | 2 | 47 | 58 |
| Verocytotoxin- producing E. coli | 3 | 30 | 30 |
| Enteropathogenic E. coli | 1 | 35 | 20 |
| Enterotoxigenic E. coli | 3 | 52 | 76 |

²⁾ Cumulative number 2009 and in corresponding period 2008

³⁾ Resp. specimens with positive PCR

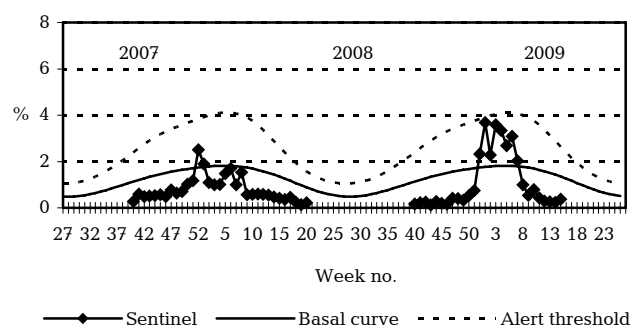
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2007/2008/2009



Sentinel: Influenza consultations (as percentage of total consultations)
 Basal curve: Expected frequency of consultations under non-epidemic conditions
 Alert threshold: Possible incipient epidemic