

Rapid communications

OUTBREAK OF SEROGROUP C MENINGOCOCCAL DISEASE IN VENETO REGION, ITALY

A Ferro¹, V Baldo (vincenzo.baldo@unipd.it)², S Cinquetti³, P Corziali⁴, G Gallo⁴, G Lustro⁵, P Paludetti⁶, T Menegon⁴, T Baldovin², G Palù², R Trivello²

1. Servizio Sanità Pubblica e Screening, Direzione Regionale Prevenzione, Venezia, Italy
2. Regional Surveillance System for Meningitis Control, University of Padua, Padua, Italy
3. Direzione Sanitaria Azienda Ulss 7, Pieve di Soligo, Italy
4. Dipartimento di Prevenzione, Azienda Ulss 9, Treviso, Italy
5. Dipartimento di Prevenzione Azienda Ulss 8, Asolo, Italy
6. Dipartimento di Prevenzione Azienda Ulss 7, Pieve di Soligo, Italy

Meningococcal infections occur worldwide as endemic disease; there have also been outbreaks in Europe and in the Americas in the last 30 years but they have not reached the high incidence levels of epidemics in other parts of the world [1].

Neisseria meningitidis causes rapid-onset bacteremia, primarily affecting children and young adults. Most of those exposed do not become ill but are temporarily asymptomatic carriers (about 10%) with peak carriage rates among people aged 15 to 30 years [2].

In Italy, the incidence of *N. meningitidis* infections is one of the lowest in Europe. Most are sporadic cases, but outbreaks sometimes occur, often in relation to serogroup C strains.

Figure 1 shows the rapid increase in the number of *N. meningitidis* serogroup C cases since 2000, with a peak in 2005 and a subsequent decline in 2006 and in the early months of 2007 [3].

Outbreak description

Between 13 and 15 December 2007, seven cases of meningitis caused by *N. meningitidis* were reported in the Treviso area, region of Veneto in north-eastern Italy. Three of them were fatal. Serotyping at the local microbiology laboratories (in Treviso, Montebelluna and

Pieve di Soligo) has demonstrated the presence of meningococci serogroup C in six cases, while the analysis is still underway for the seventh case. The reference microbiology laboratory in Padua confirmed that the meningococci isolated were genetically related.

The mean age of the cases was 23 years (range 15-33 years). The epidemiological investigation revealed that all of them had attended the same places in the Treviso area (bars, restaurants, discos) between 8 and 9 December.

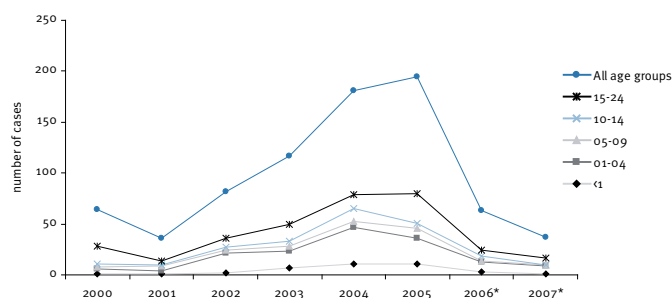
On the basis of this investigation, on 15 and 16 December, 600 people considered at risk of contact because they had frequented the same places as the cases, received chemoprophylaxis at the Hygiene and Public Health departments and first-aid facilities were set up to deal with the situation.

About 80 people with suspected symptoms of the disease were admitted to hospital as a precautionary measure, but the infection was not confirmed and all were discharged.

The outbreak raised considerable concern among the population of the Veneto region, increasing the demand for treatment (chemoprophylaxis and vaccination).

FIGURE 1

Number of cases of *Neisseria meningitidis* serogroup C by age group, Italy, 2000–2007 (n = 447)



*until September 2007, data not definitive

Source: National Surveillance System at Istituto Superiore di Sanità (ISS), data available at: <http://www.simi.iss.it>

FIGURE 2

Number of cases of *Neisseria meningitidis* serogroup C in Veneto region in 2007, by month (n = 14)

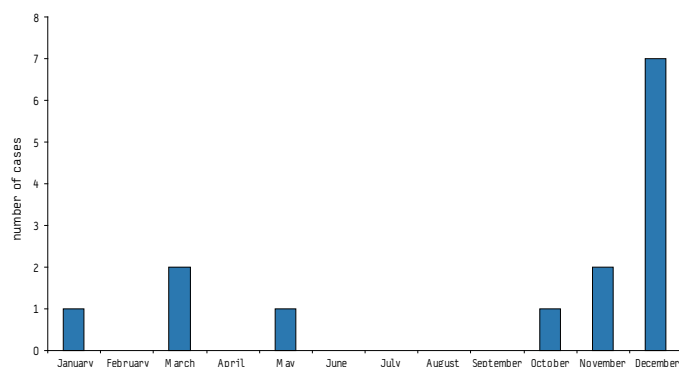


TABLE 1

Number of cases and incidence rates of *Neisseria meningitidis* serogroup C by age group, Veneto Region, 2007 (n = 14)

	Age group				Total
	01-04	05-14	15-29	30-64	
Number of cases	2	2	6	4	14
rate per 100,000 population	1.1	0.5	0.8	0.2	0.3

In total, the Veneto Surveillance System for Meningitis Control registered 14 cases of *Neisseria meningitidis* serogroup C infection in 2007, bringing the annual incidence rate in the Veneto Region to 0.3 per 100,000 population (Table 1, Figure 2).

Subsequently, two more cases were reported in the region of Veneto, on 20 December (Treviso area) and 4 January (Venice area) respectively, bringing the total number of cases in this outbreak to nine.

Management of the outbreak in the Treviso area

The management of the current outbreak in Treviso was assessed by a commission comprising members of the Prevention Departments of the areas involved, the Veneto Surveillance System for Meningitis Control and the Istituto Superiore di Sanità (ISS), and by consulting experts from the European Centre for Disease Prevention and Control (ECDC) and the Global Outbreak Alert and Response Network (GOARN) special task force.

The main control measures adopted in the management of serogroup C meningococcal outbreak are chemoprophylaxis for people at risk of infection and vaccination

Chemoprophylaxis is recommended only to those in close contact with the infected patients, including: a) members of the patient's household; b) contacts at day care centers; and c) people directly exposed to the patient's oral secretions (e.g. through mouth-to-mouth resuscitation or kissing). Giving chemoprophylaxis to people who have not been in close contact with the infected patients has not proved effective in preventing community outbreak-associated cases and is not usually recommended [4].

The first step was to determine the target group to consider as close contacts requiring chemoprophylaxis. Considering the epidemiological aspects of the epidemic cluster (number of cases, strain virulence and outbreak localization), it was decided that chemoprophylaxis should be administered to all subjects who attended the same place as the cases.

The vaccines currently available in Italy are the meningococcal C conjugated vaccine and the meningococcal polysaccharide vaccine (A, C, Y and W135).

In the Veneto Region, vaccination is offered free of charge for 1-year-olds and 15-year-olds, based on a plan implemented two years ago, with a coverage of 77% and 50% respectively (data as of 30 September 2007).

In response to the outbreak, young people of similar age as the cases (15-29 years) in the Treviso area affected by the outbreak

were vaccinated with a single dose of meningococcal C conjugated vaccine to achieve a specific immunization state within two weeks. The vaccine also has a significant effect on healthy carriers, thus reducing the transmission of the microorganism [5].

During January 2008, the need to extend the vaccination plan to other areas in the region and other birth cohorts will be assessed in order to quickly increase the vaccination coverage among young people at greater risk of the disease.

Educating the general population as well as physicians and other health-care workers about meningococcal disease has also been considered an important element of the management of this outbreak.

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