

# Epidemiology and surveillance of meningococcal disease in Italy, 2003 - 2004

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## Background

In Italy, data on invasive disease due to *Neisseria meningitidis* derive from two sources of data:

- 1) statutory notification of meningitis due to *N. meningitidis*, since 1991;
- 2) national surveillance of Bacterial Meningitis, since 1994; this system includes also sepsis due to *N. meningitidis*.

We describe the epidemiology of meningococcal invasive disease in Italy, in years 2003-2004.

## Methods

Statutory notification of meningitis due to *N. meningitidis* is required for laboratory confirmed cases, which are reported on an individual case report form including data on vaccination status. Cases are notified to the Local Health Units (LHU), that transmit the data to the regional and national authorities.

National surveillance of bacterial meningitis requires all hospitals to report any case of confirmed or clinically suspected bacterial meningitis simultaneously to the LHU, the regional and the central authorities. Cases are reported on individual case report forms, which include information on the clinical status, results of microbiological investigations and vaccination status.

All *N. meningitidis* isolates are requested to be sent to the National Reference laboratory, at the National Institute of Health (ISS), for confirmation, serotyping and molecular typing.

Data analysis is carried out by EPI-INFO version 3.3. Data from the two available sources of data are combined and duplicates excluded. Incidence by year and age-group is calculated, as well as distribution by serogroup.

## Results

In 2003 and 2004, 278 and 321 cases were reported respectively, corresponding to an annual incidence rate of 0.5 /100,000 inhabitants in both years.

The highest incidence rates were observed in children < 1 year of age, followed by the 1-4 year age group and 15-24 year age group (6.0, 3.3, 1.0/100,000 respectively) (Figure 1). Incidence was 0.9 in 5-14 year old children, and 0.2 in adults > 24 years.

Information on serogroup was available for 348/599 total cases (58%). Among cases with known information, 41% were due to serogroup C in 2003, and 53% in 2004 (Figure 2).

Overall, 58% of cases were diagnosed as meningitis, 23% as sepsis and 19% as meningitis plus sepsis.

Case-fatality rate varied by clinical presentation, being 32% for sepsis, and 4% for meningitis (Figure 3). No significant difference in case-fatality rate was observed by serogroup (14.6% for serogroup C, vs 12.3% for serogroup B).

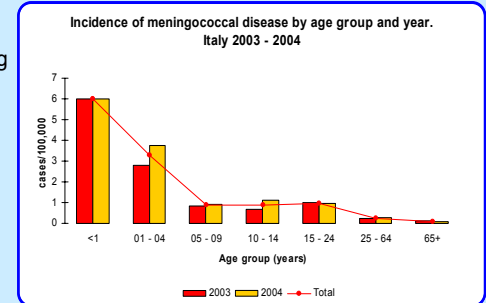


Figure 1

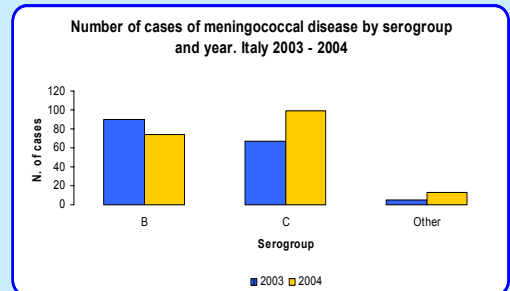


Figure 2

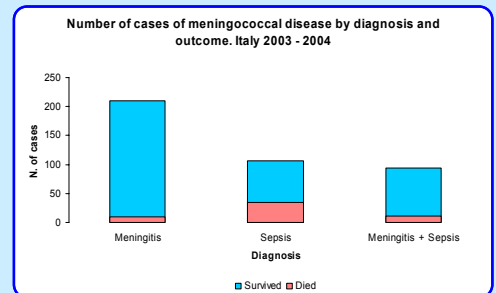


Figure 3

## Conclusions

In 2003 and 2004, the incidence of invasive meningococcal disease continues to be lower than the mean incidence observed in Europe. The increase in proportion of cases caused by serogroup C observed since 2002 continued in 2003 and 2004, and in these two years this serogroup was responsible for the majority of cases.

Surveillance data do not suggest a higher case-fatality rate for serogroup C, compared to serogroup B. Given the availability of an efficacious Men C vaccine, it's necessary to closely monitor the *Neisseria meningitidis* serogroups circulating in the country.