MENINGOCOCCAL DISEASE

Pre-decision Brief for Public Health Action

Haiti ■ Feb 2010

Key Recommendations

- Surveillance should be strengthened to establish baseline incidence and to detect sustained increases in incidence that would suggest impending outbreaks.
- Early case recognition and rapid reporting of meningococcal disease should be promoted among health care providers to: (1) ensure optimal treatment of the index case and (2) prevent secondary cases through timely initiation of chemoprophylaxis of close contacts.
- Preventive meningococcal vaccination of populations affected by the earthquake and of responders is not currently recommended.
- If a sustained increase is observed in the incidence of disease caused by a vaccine-preventable strain, vaccination should be considered. Access to laboratory testing will be needed to support that decision.

1. What was the situation in Haiti prior to the earthquake?

- One case of meningococcemia (meningococcal bloodstream infection) was reported in Haiti in 2008. Incidence and serogroup distribution data are unavailable.
- Capacity for surveillance of meningococcal disease in Haiti is not known. Capacity for culture and bacterial identification at the national level was limited prior to the earthquake.
- Generally, meningococcal disease occurs with an incidence of fewer than 2 cases/100,000 in the PAHO region. The majority of confirmed cases are infections with serogroups B and C, though serogroups W-135 and Y have also been reported. Serogroup A is largely absent from the region, and is not known to be present on Hispaniola.

2. What is the likelihood of cases/outbreaks of this disease developing in the near future?

- Though sporadic cases may occur, the likelihood of an outbreak is low. Meningococcal disease outbreaks have not been recently observed in populations following natural disasters.[1] Even in refugee camps with severe crowding and difficult conditions, epidemics caused by non-A serogroups have not been reported; however, large outbreaks caused by serogroup A have occurred in refugee camps in the African meningitis belt.

3. Should an outbreak occur, how would it be detected?

- Meningococcal disease most often presents as meningitis (fever with headache, neck stiffness, or altered mental status) and/or meningococcemia. Clinical shock with a petechial or purpuric rash is suggestive of meningococcemia.
- An outbreak in the setting of suboptimal laboratory capacity and disrupted healthcare services would most likely be detected as an increase in the number of persons presenting with meningitis.
- A doubling of meningitis cases from one week to the next occurring over three consecutive weeks (e.g., 2, 4, and 8 cases during weeks 1, 2, and 3) should alert public health officials to the possibility of an outbreak; however, this method is not completely validated, and care should be used when interpreting increases based on small numbers of cases.[4] Alternatively, if the average weekly number of meningitis cases over the preceding four weeks is available for use as a baseline, then a weekly doubling of cases over two consecutive weeks should alert public health officials to the possibility of an outbreak.

- Further investigation of meningitis clusters is necessary to confirm meningococcal disease and describe patterns of transmission. No identified risk factors influence the occurrence or magnitude of meningococcal disease outbreaks.
- Confirmation of etiology and identification of infecting serogroup are critical to guide public health response to meningococcal disease. Specialized medium (trans-isolate medium) is available to allow transfer of cerebrospinal fluid (CSF) at room temperature to a laboratory capable of performing culture. Latex agglutination test kits are also used, but require boiled CSF; these test kits are currently available in the National Public Health Laboratory (LNSP). Real-time polymerase chain reaction testing can identify infecting serogroup in cases when culture is negative, but is available only in reference laboratories.

4. What options for public health action should be considered in the event of an outbreak?

- Early (preferably within 24 hours) chemprophylaxis of close contacts is critical to prevent secondary cases.[1,2,3] Prophylaxis is not likely to be effective if initiated after 14 days. Close contact is defined as likelihood of direct contact with large respiratory droplets (e.g., household members, childcare center attendees, or persons with direct exposure to oral or respiratory secretions).
- Single-dose oral ciprofloxacin (for adults) or single-dose intramuscular ceftriaxone are recommended for chemoprophylaxis. Concerns about use of rifampin, including need for two days of dosing, induction of drug-resistant N. meningitidis (and the theoretical risk of induction of drug-resistant TB), and interactions with drugs for HIV treatment make rifampin a third choice for chemoprophylaxis.
- Mass chemoprophylaxis (i.e., administration of antibiotics to large populations) is not effective in most outbreak settings.[3]
- Meningococcal vaccines that protect against serogroups A, C, Y, and W-135 are available; most are polysaccharide vaccines, but polysaccharide-protein conjugate vaccines are also available in some countries. Availability of licensed and combination vaccine products varies from country to country.
- Vaccines specific to certain of the more common strains within serogroup B, including one from a Cuban manufacturer, have been developed for clonal outbreaks. These are likely to be effective only against matching strains.
- Confirmation of the infecting serogroup is necessary to inform the choice of vaccine. In the case of serogroup B, additional strain characterization is required to determine if protection with available vaccines is likely.
- Vaccination is an important intervention in outbreaks caused by vaccine-preventable strains; it should be considered in the setting of sustained increase in confirmed meningococcal disease cases of the same serogroup, especially if cases have no direct epidemiologic link.[4,5] In the absence of an outbreak, preventive vaccination of earthquake-affected populations and responders is not recommended due to limited risk.

References

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