Communicable Diseases Series

Meningococcal Infection

Centre for Health Protection

Department of Health

Causative agent

Meningococcal infection is caused by the bacteria *Neisseria meningitidis*.

Clinical features

The clinical picture may be variable. It may result in severe illness when the bacteria invade the bloodstream (meningococcaemia) or the membranes that envelope the brain and spinal cord (meningococcal meningitis). Meningococcaemia is characterised by sudden onset of fever, intense headache, purpura, shock and even death in severe cases. Meningococcal meningitis is characterised by high fever, severe headache, stiff neck followed by drowsiness, vomiting, fear of bright light, or rash; it can cause brain damage or even death. The brain damage may lead to intellectual impairment, mental retardation, hearing loss and electrolyte imbalance. For invasive meningococcal infection, it can be complicated by inflammation of joints, inflammation of heart muscle, inflammation of the posterior chamber of the eye or chest infection.

Mode of transmission

The disease is mainly transmitted by droplets via sneezing or coughing or by direct contact through respiratory secretions from infected persons.

Incubation period

The incubation period varies from 2 - 10 days, commonly 3 - 4 days.

Management

Meningococcal infection is a serious illness. Patients should be treated promptly with antibiotics. Close contacts would need to be placed under medical surveillance for early signs of disease and may be given preventive medications.

Risk of infection

The risk of infection is higher among close contacts of patients with meningococcal infections. Close contacts include (1) family members, (2) day care centre contacts, (3) persons directly exposed to the patient's oral secretions, and (4) those who frequently sleep or eat in the same dwellings as the patient. Certain patients with defective immune systems are also at higher risk. Other risk factors include antecedent viral infection, overcrowding, chronic illness, and active and passive smoking.

In general, the risk of acquiring meningococcal infection while travelling is low. However, in sub-Saharan Africa extending from Senegal to Ethiopia, particularly during the dry season (December to June), disease occurrence is higher, and there is additional risk for long-term travellers living in close contact with the indigenous population.

Prevention

1. Maintain good personal hygiene

- Perform hand hygiene frequently, especially before and after touching the mouth, nose or eyes; after touching public installations such as handrails or door knobs; or when hands are contaminated by respiratory secretion after coughing or sneezing.

- Wash hands with liquid soap and water, and rub for at least 20 seconds. Then rinse with water and dry either a clean cotton towel or a paper towel. If hand washing facilities are not available, or when hands are not visibly soiled, hand hygiene with 70 to 80% alcohol-based handrub is an effective alternative.

- Cover your mouth and nose with tissue paper when sneezing or coughing. Dispose of soiled tissues into a lidded rubbish bin, then wash hands thoroughly.
- When having respiratory symptoms, wear a surgical mask, refrain from work or attending class at school, avoid going to crowded places and seek medical advice promptly.
- Build up good body immunity by having a balanced diet, regular exercise, adequate rest, reducing stress, do not smoke and avoid alcohol consumption.

2. Maintain good environmental hygiene

- Regularly clean and disinfect frequently touched surfaces such as furniture, toys and commonly shared items with 1:99 diluted household bleach (mixing 1 part of 5.25% bleach with 99 parts of water), leave for 15 - 30 minutes, and then rinse with water and keep dry. For metallic surface, disinfect with 70% alcohol.
- Use absorbent disposable towels to wipe away obvious contaminants such as respiratory secretions, and then disinfect the surface and neighbouring areas with 1:49 diluted household bleach (mixing 1 part of 5.25% bleach with 49 parts of water), leave for 15 - 30 minutes and then rinse with water and keep dry. For metallic surface, disinfect with 70% alcohol.
- Maintain good indoor ventilation. Avoid going to crowded or poorly ventilated public places; high-risk individuals may consider putting on surgical masks while in such places.

3. Advice to travellers

- Travellers to high-risk areas should consult their doctor before the trip to determine the need for meningococcal vaccination. Travellers returning from high-risk areas should seek medical advice if they become ill. Inform doctor of recent travel history.

Meningococcal vaccination

Meningococcal vaccines have been registered in Hong Kong. To minimise the risk of meningococcal infection, vaccination may be considered for the following groups of travellers:

- Travellers to the sub-Saharan Africa during the dry season according to the risk of exposure and local epidemic situations;
- Travellers to areas that are known to experience epidemic meningococcal disease as announced by authorities; and
- Travellers aged over 2 years visiting Saudi Arabia for Hajj, Umrah or for seasonal work in Hajj zones should bring along certificate of vaccination with the quadrivalent (serogroups A,C,Y & W135) meninogococcal vaccine administered not less than 10 days before arrival in Saudi Arabia. Further information is available at the website of the Ministry of Health of the Saudi Arabia (https://www.moh.gov.sa/en/Pages/Default.aspx).

Travellers should seek professional advice from doctors for vaccination in view of the individual's age and health condition, and details of the journey such as place, duration and nature.

Centre for Health Protection Website	www.chp.gov.hk
Health Education Infoline of the Department of Health	2833 0111

Revised in September 2020