

Melioidosis



Causative agent

Melioidosis is a disease caused by the bacterium *Burkholderia pseudomallei*. It can affect both humans and animals such as sheep, swine, cats, dogs, etc. This bacterium is widespread in soils and muddy water, particularly common in moist clay soils. It is endemic in Southeast Asia (e.g. Singapore and Thailand) and northern Australia.

Clinical features

Melioidosis may present with localised infection (such as cutaneous abscess), pneumonia, meningoenzephalitis, sepsis, or chronic suppurative infection. Depending on the site of infection, common symptoms include fever, headache, localised pain or swelling, ulceration, chest pain, cough, shortness of breath, haemoptysis, and swelling of regional lymph nodes.

Mode of transmission

Humans can become infected through contact with contaminated soil and surface waters (especially through skin abrasions/wounds); inhalation of contaminated dust/water droplets; and ingestion of contaminated water. Person-to-person transmission is rare but may occur through contact with the blood or body fluids of an infected person.

Burkholderia pseudomallei in the soil and muddy water may be exposed to the ground after typhoons or storms, and the bacteria would spread more easily with strong wind and storms. As such, infection cases are more common after typhoons or storms.

High risk groups

Persons with underlying diseases including diabetes, lung disease, liver disease, renal disease, cancer, or immunosuppression have higher risks for contracting the disease. Agricultural, laboratory and health-care workers are also vulnerable to occupational exposure.

Incubation period

The incubation period varies, usually from 1 to 4 weeks, but can range from 1 day to few years.



Management

Melioidosis can be treated with antibiotics. Long-term treatment may be necessary for some chronic infection cases. Overall mortality rate ranges from around 20-50%.

Prevention

No vaccine is available for melioidosis. To prevent melioidosis, people should take the following measures:

- ▶ Avoid contact with contaminated soil.
- ▶ Wear appropriate protective clothing or footwear when participating in activities with possible contact with soil or water, e.g. use gloves and wear boots. High risk individuals may consider to wear a surgical mask in addition.
- ▶ Wash or shower after exposure to contaminated water or soil.
- ▶ Always clean any wounds as soon as possible and cover any cuts or grazes with waterproof dressings.
- ▶ Wash hands with liquid soap and water after handling with soils or gardening.
- ▶ Melioidosis can be spread by contaminated soil and water during and after typhoons and storms. Whether practicable, stay indoor during typhoons and storms, avoid travelling to areas with potential flooding, and not to wade or contact with muddy water and soil. In addition, high risk individuals should avoid path near stormwater drains where aerosols may be generated from contaminated water. If possible exposure is inevitable, high-risk individuals should wear a surgical mask, gloves and boots.
- ▶ Observe food hygiene and avoid drinking unboiled or untreated water.
- ▶ Travelers can contract the disease through outdoor water sports. Risk of infection can be minimised by avoiding exposure to water sources (such as rivers, ponds or lakes) that might be contaminated.



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