

Etiology and Preventive Measures for Non-tuberculous Mycobacteria Infection

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DESCRIPTION

Nontuberculous Mycobacterial (NTM) infections are caused by a group of bacteria found in the environment (water and soil), as well as by contaminated cardiac or medical devices. They are not typically transmitted through contact with an infected person (except in some cases of cystic fibrosis).

Nontuberculous Mycobacteria are environmental pathogens that can cause a variety of infections. Nontuberculous Mycobacteria are a type of bacteria that can infect many different parts of the body. Although these bacteria are related to *Mycobacterium tuberculosis*, the species that causes tuberculosis, they are not the same. The lungs are the most commonly infected organs. Nontuberculous Mycobacterial infection can affect skin and soft tissue, lymph nodes, and blood, but it is uncommon for nontuberculous mycobacterial infection to cause disease both inside and outside the lungs. Contaminated medical devices, such as pacemakers or catheters inserted into veins or arteries, can cause nontuberculous mycobacterial infections.

Symptoms

The type of nontuberculous mycobacterial infection and the part of the body affected determine the symptoms. Cough, shortness of breath, and weight loss are common symptoms of lung infection. Symptoms of infection outside the lungs vary depending on the site of involvement (skin infection can produce nodules; bone infection can produce bone pain; and more widespread infection can cause fever, weight loss, and sweating). Some nontuberculous mycobacterial infections can be fatal if not treated.

Acquired nontuberculous mycobacterial infection

Nontuberculous mycobacteria are common in the environment, especially in water and soil. Unlike tuberculosis, these bacteria are typically acquired through environmental exposure rather than from infected people. However, a specific nontuberculous

mycobacterium in cystic fibrosis patients may be transmitted to other cystic fibrosis patients. Infection can occur as a result of inhaling soil or dust, coming into contact with natural and municipal water sources, or being exposed to contaminated equipment or tools. Lung scarring (bronchiectasis), chronic obstructive pulmonary disease, cystic fibrosis, and other underlying lung disease are all risk factors for lung infection. HIV/AIDS and severe immunosuppression are risk factors for infection outside the lungs. Skin and soft tissue infections can occur in healthy people as a result of contaminated surgical equipment or equipment used in nail salons and tattoo parlours.

Treatment and diagnosis

Nontuberculous mycobacterial infections can be difficult to diagnose and are dependent on the suspected site of involvement. Lung disease is diagnosed by identifying the bacterium in lung secretions or deeper lung samples. Biopsies of the affected area are frequently required for disease that occurs outside of the lungs. Nontuberculous mycobacterial infection requires multiple antibiotics for extended periods of time (months, and in some cases, years) and can be difficult to cure. In order to remove infected tissue, surgery may be required.

Preventing infection

Because there are so many different types of nontuberculous mycobacteria in the environment, prevention can be difficult, particularly for patients with lung diseases like bronchiectasis, cystic fibrosis, or chronic obstructive pulmonary disease. Certain nontuberculous mycobacterial skin infections have been linked to cosmetic surgery (particularly outside the United States), so it is critical to be aware of these risks when considering these procedures. There have also been outbreaks of nontuberculous mycobacterial infection linked to contaminated tattoo ink. To reduce the risk of infection, use tattoo parlours that are registered with local jurisdictions and follow strict hygienic practises.

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