

## *Mycobacterium abscessus*: Causes of Infection and Treatment

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### DESCRIPTION

A group of multisystem infections known as mycobacterial infections are brought on by members of the Mycobacteriaceae family. These organisms are recognized as acid fast bacilli based on their type of stain. A group of environmental microorganisms called Non-Tuberculous Mycobacteria (NTM) are frequently found in soil and water [1]. *Mycobacterium abscessus* is the most famous of all NTM bacteria. It is a type of environmental mycobacteria that can be found in dust, soil, and water. *Mycobacterium abscessus* is a major NTM of all the other species. It is known to contaminate products and drugs, including medical equipment. Numerous infections can be brought on by *M. abscessus*. This bacterium typically causes infections in soft tissues under the skin and in the skin itself that are healthcare-associated. It can also lead to serious lung infections in people who have certain chronic lung conditions, like cystic fibrosis. This infection may occur in people who have open wounds or receive injections without performing the necessary skin cleaning. Usually people are at risk for lung infection if they have underlying respiratory problems or weak immune systems. The bacteria that cause leprosy and tuberculosis are distantly related to those that cause *Mycobacterium abscessus* [2]. It can be found in water, dirt, and dust and belongs to a class of microorganisms known as fast developing mycobacteria. It has been observed that these can contaminate medical equipment as well. It infects skin which is typically erythematous, warm and tender to the touch, swollen, and painful. Pimples filled with pus also get formed on the infected sites. *M. abscessus* is a bacterium that is not closely related to those that cause tuberculosis and Hansen's disease (Leprosy).

Fever, chills, aches in the muscles, and a general feeling being unwell are other symptoms of *M. abscessus* infection. A medical professional would assess the infection to determine whether, *M. abscessus* could be to reason of the problem. When diagnosis this bacterium is grown in the lab from a pus sample or biopsy of the diseased area [3]. When the infection is severe, the bacterium can be isolated from a blood sample and identified in the blood. The healthcare provider must collect a sample from the contaminated area or blood and submit it to a lab for analysis.

in order to diagnose the condition. People who exhibit any signs of infection in a spot where they underwent operations, such as surgery or injections, should inform medical doctors immediately so that the necessary tests may be performed. There are numerous methods in which *M. abscessus* might spread. *M. abscessus* infections typically result from invasive medical operations employing contaminated tools or materials or from injections of substances contaminated with the bacterium. Infection can also develop if an unintentional wound becomes contaminated by soil. The probability of transmission from person to person is quite low. The appropriate combination of medicines must be given for a lengthy period of time while extracting pus collections or removing the infected tissue is the foundation of *M. abscessus* infection treatment. A three- to four-antibiotic combination, including clarithromycin, azithromycin, rifampin, rifabutin, ethambutol, streptomycin, and amikacin, is frequently advised by doctors [4]. The most effective course of treatment for each patient can be determined by the doctor by testing the germs against several antibiotics.

### CONCLUSION

NTM bacteria come in more than 180 different strains. Except for those with weaker immune systems, the majority of these do not cause disease. When breathe in bacteria from soil or misty water (such as in a shower or hot tub), people can get an NTM illness. Many patients get severe lung infection if they are not treated in time. To stop the mycobacteria from developing resistance to antibiotics, medical supervisors utilize variety of antibiotics. The typical medications used to treat skin infections usually have less or no effect on this bacterium's illness. The most common consequence, involving 94% of people, is chronic lung infection. The signs are typically unclear and resemble those of other lung or respiratory illnesses. Research findings of Medicare patients found that rates of Pulmonary Non- Tuberculous Mycobacteria (PNTM) were highest in the West and Southeast and lowest in the Midwest, and that NTM-related mortality was higher in the south of the United States. With some NTM strains, a full recovery may be possible, but not with others. It frequently reinfects. User might need to alter their lifestyle in order to prevent contracting with the infection.

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