

# Mycobacterium avium intracellulare (mai)

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Mycobacterium avium intracellulare Mycobacterium avium complex is made up of two species by Mycobacterium avium and Mycobacterium avium intracellulare (Nightingale et al. 1082). The species are difficult to differentiate and thus, collectively; they are referred to as Mycobacterium avium-intracellulare. Mycobacterium avium complex is the bacterium most commonly associated with human diseases.

#### Virulence and Morphology

Virulence is the ability of viruses to spread diseases. The Mycobacterium avium can affect individuals with immunodeficiency. It may also affect people without any apparent predisposing conditions although the outcomes are still unclear. From recent studies, however, its growth has been restricted to use of tumor necrosis factors.

In the production of fetal malformation, Clarithromycin and azithromycin are some of the new-generation macrolides that have been accepted and approved (Nightingale et al. 1084). They are available in antibiotic state though their cost is substantially high.

The species structure occurs in complex transparent or opaque morphology. The transparent morphology has a higher chance of affecting normal human monocytes than the opaque. It has been proven using the monocyte-bacteria cocultures. The transparent structure however has lower ability to induce intercellular secretion of interleukin (Nightingale et al. 1083).

#### Treatment, Precaution and Prevention

The infection is treated with two or three antimicrobials for at least twelve months. Macrolides, ethanol and rifamycins are used with aminoglycosides as additional agents.

Since it is common for HIV patients, it is advised that precaution should

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apply to both infected and non-infected people through thorough cleaning using detergents to remove body secretions. Staff that work with such patients should wear simple cloth barriers always when handling the patients and disinfection of bronchoscopes for at least twenty minutes in alkaline glutaraldehyde after cleaning (Nightingale et al. 1085).

#### Risk Groups

In earlier days, about 30% of HIV patients suffered this infection but with the increased discoveries in the field, it has significantly reduced to about 5%. Young children between 1-4 years especially from developing countries have a bigger risk of infection (Nightingale et al. 1082).

#### Works cited

Nightingale, Stephen D., et al. " Incidence of Mycobacterium avium-intracellulare complex bacteremia in human immunodeficiency virus-positive patients." *Journal of Infectious Diseases* 165. 6 (1992): 1082-1085.