

招請講演

Nontuberculous Mycobacterial Lung Disease

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Nontuberculous mycobacteria (NTM) are ubiquitous organisms ; their isolation from clinical specimens does not always indicate clinical disease. The incidence of NTM lung diseases has been increasing worldwide. Although the geographic diversity of NTM species is well known, the most frequent human pathogens are *Mycobacterium avium* complex (MAC), followed by *M. abscessus* complex (MABC) in many countries. MAC mainly consists of *M. avium* and *M. intracellulare*, and MABC is predominantly composed of *M. abscessus* and *M. massiliense*.

NTM lung disease usually has two major clinical phenotypes : fibrocavitary and nodular bronchiectatic. The fibrocavitary form is characterized by cavitary lesions that occur predominantly in the upper lobes and usually develops in older males with underlying lung disease, such as previous pulmonary tuberculosis and/or chronic obstructive pulmonary disease. The nodular bronchiectatic form occurs predominantly in postmenopausal, non-smoking females, and can present as bilateral bronchiectasis with multiple nodules and tree-in-bud opacities on high-resolution computed tomography.

For the diagnosis of NTM lung disease, patients suspected to have NTM lung disease are required to meet all clinical and microbiologic criteria. For laboratory diagnosis of NTM lung diseases, both liquid and solid media cultures and species-level identification are recommended to enhance growth detection and determine the clinical relevance of isolates.

A diagnosis of NTM lung disease alone does not obligate the immediate initiation of treatment directed against the NTM pathogen. Instead, this decision should be based on the potential risks and benefits of a prolonged course of multiple antibiotics for the individual patient, taking into consideration age, comorbid medical conditions, and disease type. Patients with fibrocavitary disease usually require immediate treatment because cavitary disease is associated with a higher rate of mortality due to NTM lung disease. Conversely, nodular bronchiectatic disease tends to occur in the absence of significant comorbidity and often progresses slowly.

Treatment for NTM lung diseases consists of a multidrug regimen and a long course of therapy, lasting more than 12 months after negative sputum conversion. For MAC lung disease, macrolide-based multidrug regimens are recommended. For nodular bronchiectatic forms of MAC lung diseases, an intermittent three-time-weekly regimen produces outcomes similar to those of daily therapy.

Treatment of MABC lung disease is very difficult, requiring long-term use of parenteral agents in combination with multiple oral antibiotics. Treatment outcomes are much better for *M. massiliense* lung disease than for *M. abscessus* lung disease. Thus, precise identification of species in MABC infection is needed for the prediction of antibiotic response. New diagnostic and therapeutic modalities are needed to optimize the management of NTM lung disease.