

# Nontuberculous Mycobacterial Pulmonary Disease (NTM-PD)

NTM-PD is becoming an increasingly prevalent disease in the United States and in many places in the world.

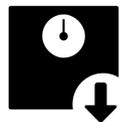
How do you recognize and diagnose it? What are the basic tenets of treatment?



## CLINICAL PRESENTATION



Fever



Weight Loss



Cough  
↑ Sputum



Shortness of Breath

ATS/ERS/ESCMID/IDSA Diagnostic Criteria<sup>2</sup> (All three criteria required and exclusion of alternative diagnosis)



### Clinical Features

Pulmonary or systemic symptoms (as above)



### Radiographic Changes

Nodular or cavitory lung opacities on chest imaging, or  
Chest CT showing bronchiectasis with multiple small nodules (tree-in-bud appearance)



### Microbiology

Positive sputum culture results from >2 samples, or  
Positive bronchial wash or BAL culture, or  
Transbronchial/lung biopsy with mycobacterial histologic features and positive culture for NTM, or  
Biopsy showing mycobacterial histologic features and >1 sputum or bronchial culture positive for NTM

<sup>1</sup>McShane PJ, Glassroth J. Pulmonary disease due to NTM: current state and new insights. *Chest*. 2015.

<sup>2</sup>Daley CL, Iaccarino JM, Lange C, etc. Treatment of nontuberculous mycobacterial pulmonary disease: an official ATS/ERS/ESCMID/IDSA clinical practice guideline. *Eur Respir J*. 2020.

## Radiographic Patterns or Clinical Phenotypes<sup>1</sup>



### Fibronodular Bronchiectasis

(Often in post-menopausal women)

- Nodular and small centrilobular nodules or tree-in-bud opacities
- Bronchiectasis with right middle lobe and lingular predominance



### Fibrocavitary

(Often coexisting emphysema in men)

- Upper lobe predominant cavitation
- Adjacent ground glass +/- micronodules



### Hypersensitivity Pneumonitis

("Hot tub lung")

- Diffuse ill-defined centrilobular nodules with ground glass
- Associated with inhalation exposure (eg, MAC from hot tub)

## Treatment Pearls for *M. Avium* Complex (MAC) Lung Disease<sup>2</sup>

- Typically includes a **three-drug regimen** based on drug-susceptibilities for macrolide and amikacin; consider consultation with specialist
- Duration: At least 12 months after sputum culture conversion
  - **Macrolide (Azithromycin preferred) + Rifamycin + Ethambutol**
  - Cavitory/severe disease/macrolide-resistance → add IV amikacin or streptomycin and daily oral antimicrobial therapy
  - No response after treatment for 6 months (probable refractory MAC lung disease) → consider adding inhaled liposomal amikacin