A nontuberculous mycobacterial (NTM) lung infection is a chronic and debilitating condition that can get progressively worse. Although the majority of healthy individuals exposed to NTM do not contract the infection, patients with structural lung disease, such as chronic obstructive pulmonary disease (COPD), asthma, cystic fibrosis (CF), and bronchiectasis, are at a significantly greater risk of being infected.1,4-6

REMEMBER! RULE IT IN. OR RULE IT OUT. Research has shown that for nearly 3 out of 4 patients with at least 1 positive culture, NTM does not clear on its own.7 If you think NTM, test for NTM. For patients with 2 positive cultures, continue with the diagnosis steps outlined below:

Diagnostic Criteria*
Clinical, radiographic, AND microbiologic criteria are all required for diagnosing NTM pulmonary disease3

Is it a pulmonary NTM infection?
• Refer patients to an NTM expert if you suspect the NTM infection is either unusual or represents contamination

Clinical/radiographic criteria
• Bronchopulmonary symptoms, nodular or cavitary opacities on chest radiograph, or multifocal bronchiectasis with multiple small nodules on HRCT scan
  and
• Exclusion of other diagnoses

Microbiologic criteria
• Positive culture results from at least 2 separate expectorated sputum samples
  or
• Positive culture result from at least 1 bronchial wash or lavage
  or
• Transbronchial or other lung biopsy with mycobacterial histopathologic features,† and positive culture for NTM or biopsy showing mycobacterial histopathologic features and 1 or more sputum or bronchial washing that are culture positive of NTM

†Granulomatous inflammation or AFB.

Diagnosis: NTM infection
• A diagnosis does not, per se, necessitate the institution of therapy but rather a decision based on potential risks and benefits of therapy for individual patients

• Antimycobacterial treatment can be associated with substantial side effects, and with the recommended treatment duration of 18 months, demands a high level of acceptance on behalf of the patient. Therefore, it is recommended to prepare the patient accordingly ahead of treatment initiation

Therapy according to ATS/IDSA Statement
TARGETING CULTURE CONVERSION

The primary microbiological goal for treating NTM is the conversion of positive sputum cultures to negative. Additional indications of success include symptomatic and radiographic improvement.

WHAT DOES TREATMENT SUCCESS LOOK LIKE?

To assess the response to treatment, ATS/IDSA Statement recommends:

- Obtaining monthly cultures of sputum
- Within 3 to 6 months, patients should show clinical improvement
- Within 12 months, patients should convert their culture to sputum-negative
- Twelve months of culture-negative sputum status is the recommended endpoint of treatment

Defining Treatment Success

The current treatment strategies for the most common species of NTM lung infections, *Mycobacterium avium* complex (MAC), are broken down by severity and patient type.

<table>
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<th>Treatment for an NTM Infection*</th>
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### INITIAL THERAPY FOR NODULAR/BRONCHIECTATIC DISEASE

| Macrolide | Clarithromycin 1000 mg TIW or azithromycin 500–600 mg TIW |
| Ethambutol | 25 mg/kg TIW |
| Rifamycin | Rifampin 600 mg TIW |
| IV Aminoglycoside | None |

*Not recommended for severe or previously treated disease. IV=intravenous; TIW=three times weekly.

### INITIAL THERAPY FOR CAVITARY DISEASE

| Macrolide | Clarithromycin § 500–1000 mg/d or azithromycin 250–300 mg/d |
| Ethambutol | 15 mg/kg/d |
| Rifamycin | Rifampin 450–600 mg/d |
| IV Aminoglycoside | Streptomycin or amikacin § TIW or none |

§Clarithromycin may need to be dosed BID (eg, 250 mg BID or 500 mg BID) if gastrointestinal intolerance occurs. 
§Lower dose for weight <50 kg. 
§See ATS/IDSA Statement for the complete dosing recommendation. IV=intravenous; TIW=three times weekly.

### ADVANCED (SEVERE) OR PREVIOUSLY TREATED DISEASE

| Macrolide | Clarithromycin § 500–1000 mg/d or azithromycin 250–300 mg/d |
| Ethambutol | 15 mg/kg/d |
| Rifamycin | Rifabutin 150–300 mg/d or rifampin 450–600 mg/d |
| IV Aminoglycoside | Streptomycin or amikacin § TIW |

*Clarithromycin may need to be dosed BID (eg, 250 mg BID or 500 mg BID) if gastrointestinal intolerance occurs. 
§Lower dose for weight <50 kg. 
*See ATS/IDSA Statement for the complete dosing recommendation. IV=intravenous; TIW=three times weekly.

Visit NTMfacts.com for up-to-date information on NTM lung infections, as well as additional useful resources.