

Lower Respiratory Infections: Bronchiectasis and Lung abscess

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Contents

1	Bronchiectasis	1
2	Lung abscess	1

1 Bronchiectasis

Bronchiectasis is the abnormal dilation of bronchi due to the destruction of the elastic and muscular components of the bronchial wall. It is often caused as a consequence of recurrent and/or severe infections secondary to an underlying disorder. The majority of patients will present with a chronic cough and sputum production.

Bronchiectasis often presents with recurrent pulmonary infections, including a chronic daily productive cough with mucopurulent sputum production.

High-resolution chest computed tomography is the confirmatory test.

Diagnostic testing is geared towards identifying the underlying aetiology, as treatment will be successful only if it treats both the bronchiectasis and any underlying disease process.

A sputum sample should be obtained when the patient is in a stable state and during acute exacerbations. Antibiotics are used in three scenarios: to treat acute exacerbations, eradication of a first or new isolation of *Pseudomonas aeruginosa*, and long-term antibiotics to suppress chronic bacterial infection. Where possible, antibiotic choice should be based on culture and sensitivity from sputum samples.

Daily airway clearance is essential for treatment success.

Exercise training is often offered as part of a pulmonary rehabilitation programme, combined with patient education and training in self-management, and delivered on an outpatient basis or remotely via telerehabilitation. Self-management plans aim to increase patients' confidence in managing their own condition.

Maintenance aerosolised antibiotics may be used for treatment of severe bronchiectasis or recurrent *Pseudomonas aeruginosa* infections.

Surgical therapy, including lung transplantation, should be considered for adult patients who continue to deteriorate despite optimal medical management.

2 Lung abscess

A lung abscess is a localised collection of pus within the lung that leads to cavitation that usually has a thick wall. Abscesses occur most commonly when microbial infection

causes necrosis of the lung parenchyma, forming 1 or more cavities. Communication of such cavities with the bronchial tree results in a cough productive of purulent sputum and the presence of air-fluid levels on chest x-ray.

Lung abscess is a circumscribed collection of pus in the lung that leads to cavity formation.

Aspiration of gastric contents is the most common causative factor. Mixed microbial flora, including anaerobic bacteria and microaerophilic streptococci, are involved in abscess formation related to the aspiration of gastric contents.

Fever associated with a productive cough and putrid expectoration is a common clinical manifestation.