PRIMEVIEW

BRONCHIECTASIS

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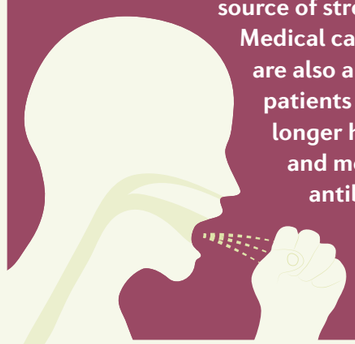
Bronchiectasis refers to the dilatation of the bronchi and leads to impaired clearance of mucus from the lungs, which promotes airway damage via several pathological mechanisms. With time, airway damage results in impaired lung function and eventual respiratory failure and death.

EPIDEMIOLOGY

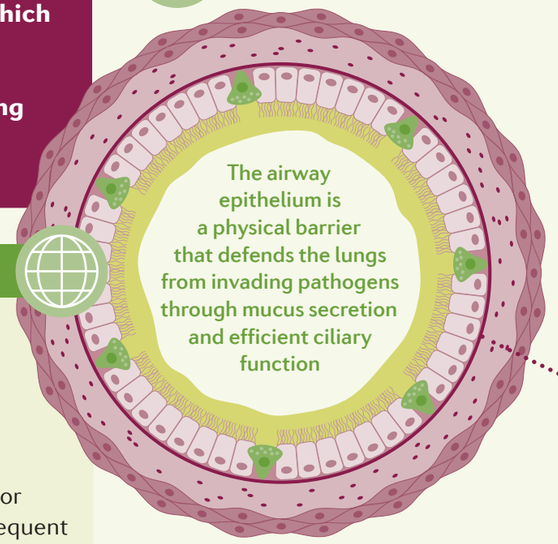
Bronchiectasis can affect individuals of any age, but overall prevalence increases with age: the mean age of patients in Europe and Australia is 65 years. Global prevalence and the distribution of the underlying aetiologies vary geographically; for example, post-infectious bronchiectasis is frequent in countries with a high burden of tuberculosis or other respiratory infections.

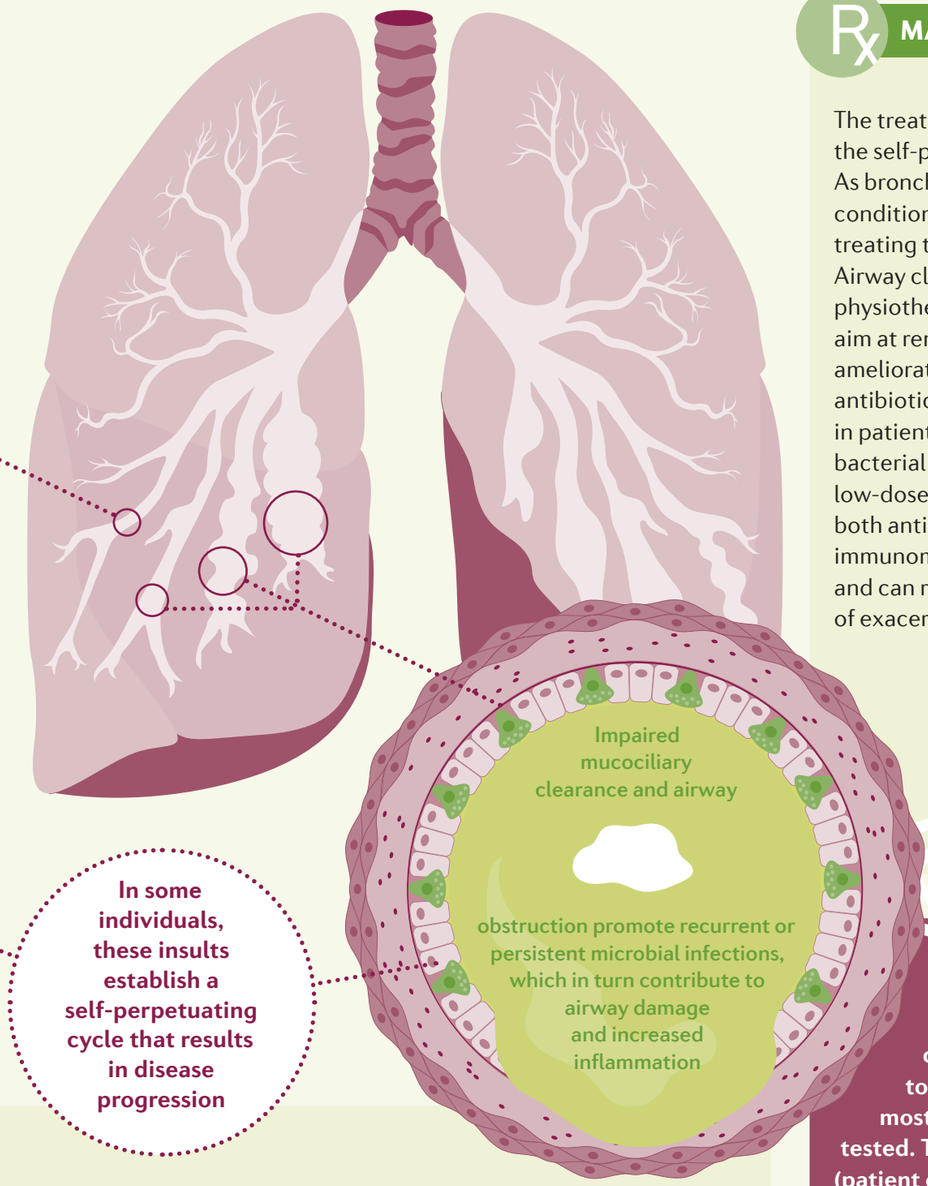
QUALITY OF LIFE

Fatigue, shortness of breath and productive cough (producing mucus) with unexpected exacerbations are detrimental to the physical and mental health of individuals with bronchiectasis. Symptoms, in particular cough, can also interfere with work and social events. Furthermore, the progressive and difficult-to-manage nature of bronchiectasis is a source of stress and anxiety. Medical care expenditures are also a burden, as patients experience longer hospitalizations and more frequent antibiotic therapy than individuals with other chronic diseases.



PATHOPHYSIOLOGY





An initial insult to the airway epithelium causes bronchial dilatation and predisposes to infection, inflammation and dysregulated immunity

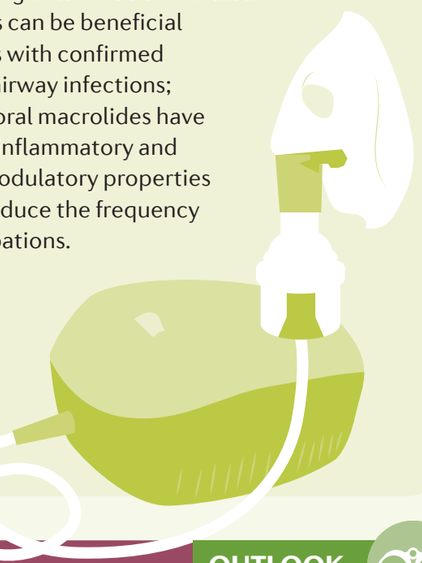
In some individuals, these insults establish a self-perpetuating cycle that results in disease progression

DIAGNOSIS

The main symptom of bronchiectasis is chronic productive (in adults) or wet (in children, who rarely expectorate mucus) cough, and bronchiectasis should be suspected if recurrent or persistent respiratory infections are present. The clinical diagnosis should be confirmed with radiological examination, with high-resolution CT. Once bronchiectasis is confirmed, further investigations should be performed to determine the causative underlying disease, as the aetiology guides clinical management. Nevertheless, the cause cannot be found in a substantial proportion of patients, who are diagnosed with idiopathic bronchiectasis.

MANAGEMENT

The treatment of bronchiectasis aims at stopping the self-perpetuating pathogenetic mechanisms. As bronchiectasis can result from several conditions, the first step is identifying and treating the underlying disorder, if possible. Airway clearance methods, which include physiotherapy techniques and inhaled agents, aim at removing secretions from the airways and ameliorating inflammation. Inhaled antibiotics can be beneficial in patients with confirmed bacterial airway infections; low-dose oral macrolides have both anti-inflammatory and immunomodulatory properties and can reduce the frequency of exacerbations.



OUTLOOK

The failure of most bronchiectasis clinical trials could reflect an inability to correctly select patients who are most likely to benefit from the treatment tested. The identification of clinical phenotypes (patient characteristics) and endotypes (measurable biological processes) that are associated with specific clinical outcomes could help to improve patient selection. Future trials should also focus on end points that could be modified with therapy and reflect the severity of disease, such as frequency of exacerbations and hospital admissions and quality of life.

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