

Mechanism and Management of Bronchiectasis

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Introduction

Bronchiectasis is a disorder in lungs that causes coughing up of mucus. In the lungs, the bronchi are the entries that permit air to enter the lungs. In bronchiectasis, within surfaces of the bronchi get thicker over the time from inflammation that leave scars. Due to thickness in the walls it causes mucus to collect in these passages as the walls are not strong enough to make the mucus flow out of the lungs. Additionally, the cilia (thin strands hair like structure which help move mucus) are destroyed. In such a case infections are developed more easily and breathing becomes difficult. The condition when breathing or coughing gets worse is called exacerbation.

Symptoms of bronchiectasis

It is an extremely soft, breathable, and water resistant tape made of Nylon/Lycra or Recycled PET/Lycra material. It is an innovative, 4-way stretching tape with very strong elastic resistance and recoil, which absorbs load and contribute to force generation to reduce the workload on the body. This improves biomechanical efficiency and modifies faulty movement patterns. It has been originally developed to provide solutions in sports medicine.

Benefits of biomechanical tape

Some of the most common symptoms are:

- Coughing which leads to a lot of mucus
- Coughing with blood in it (known as hemoptysis)
- Chest pain or tightness
- Sounds like wheezing or whistling produces while breathing
- Clubbing of nails
- Weight loss
- Flare-ups which include:
 1. Tiredness
 2. Fevers and/or chills
 3. Rapid shortness of breath
 4. Sweats during night

How is Bronchiectasis Treated?

The major objective for the treatment Bronchiectasis is to prevent infections and flare-ups. Treatment involves a combination of medication, hydration and chest physical therapy. Oxygen therapy is sometimes recommended to raise low oxygen levels. In extreme situations surgery is recommended where the bronchiectasis is isolated to a section of lung or there occurs excessive bleeding.

Antibiotics

Use of antibiotics is the most common treatment for bronchiectasis. Mostly Oral antibiotics are suggested, but some infections might require intravenous (IV) antibiotics. Macrolides are the best prescribed antibiotic which not only kill bacteria but also helps reduce inflammation in the bronchi. These are used in the extreme severe cases as they have side effects.

Mucus thinning medication

It may be prescribed so that patient can cough up mucus. These medications are mostly given via nebulizer, where it is mixed with

hypertonic saline solution, where it turns into a mist, and can be inhaled deep into the lungs.

Airway clearance devices

There are several hand-held device that help break up mucus such as Oscillating Positive Expiratory Pressure (PEP), Intrapulmonary Percussive Ventilation (IPV) and Postural Drainage. Chest Physical Therapy (CPT), or chest physiotherapy, is a common therapy which involves clapping on the chest in a certain way that helps loosen mucus from the lungs so it can be thrown. Electronic chest clappers or vests are also available to perform CPT at home.

How to Manage Bronchiectasis

Bronchiectasis is a long-term condition with symptoms that should be managed over years. Patients should follow up with doctor to determine healthy habits in order to limit flare-ups. Some suggestions may be:

- Quit smoking
- Maintain a balanced and a healthy diet, low sodium content, added sugars, saturated fats and refined grains.
- Drink plenty of water in order to prevent mucus build-up.
- Be diligent in oral medications and performing mucus clearance techniques daily.
- Take vaccinations timely
- Take antibiotics for one to two weeks during flare-ups.

Even after maintaining healthy lifestyle, occasional flare-ups may occur. This may happens because of a new respiratory infection or bacteria overgrowth. General symptoms such as increased mucus production (of blood or a different color), fever, fatigue, weight loss and improper breath may arise. In such case, one should take doctor consultation immediately.

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Received February 05, 2021; Accepted February 20, 2021; Published February 27, 2021

Citation: Rau N (2021) Mechanism and Management of Bronchiectasis. J Nov Physiother 11: 455.

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