Original Article

AWARENESS ON TREATMENT PROTOCOLS WITH BRONCHIECTASIS AMONG DENTAL STUDENTS

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Abstract

Introduction: Bronchiectasis is a long-term lung infection. Bronchiectasis patients have airways (tubes connecting the windpipe to the lowest part of the lungs) are wider than normal. This can lead to mucus (or sputum) building up and making you more at risk of getting infections in lungs. Infections can cause the lungs to become inflamed, which can damage or block parts of the lung, can lead to symptoms like breathlessness, chest pain and tiredness. Bronchiectasis is also called non-cystic fibrosis (non-CF) bronchiectasis.
Aim: The aim of this study is to create awareness on treatment protocols with bronchiectasis.
Materials and Method: A cross-sectional observational study was conducted among the dental college students. A total of 100 students were randomly sampled and who voluntarily participated in the study; the subjects were fully informed about the design and purpose of the study.
Results: The data is collected and statistically analysed. 38% of the participants were female and 62% of the participants were male (Figure1). Majority of participants (59%) agreed that Bronchitis can lead to pneumonia if you don't seek treatment (Figure 2). 59% of the participants agreed that when you cough, you might also notice that your phlegm looks green or yellow.
Conclusion: This review considers the evidence for defining and treating bronchiectasis, the approaches for eradication of newly identified airway pathogens and the methods to prevent exacerbations through long-term treatments from a pragmatic practice-based perspective. Areas for future studies are also explored.

Keywords: Awareness; Bronchiectasis; Bronchial colonization; Bronchial infection; Eco friendly; Exacerbation; Innovative technology; Treatment.

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INTRODUCTION:

Bronchiectasis is a long-term lung infection . Bronchiectasis patients mostly have airways (tubes connecting the windpipe to the lowest part of the lungs) are wider than normal. This can even lead to mucus (or sputum) building up and making you more at risk of getting infections in lungs(Haworth, 2011). Infections can cause the lungs to become inflamed, which can damage or block parts of the lung, can even lead to symptoms such as breathlessness, chest pain and also tiredness(Ignatova and Antonov, 2019). Bronchiectasis also known as non-cystic fibrosis (non-CF) bronchiectasis(Garrett, 2019). The common symptoms of bronchiectasis are a cough that is hard to get rid of, coughing up mucus, having short of breath and getting lots of lung infections(‘Bronchiectasis: diagnosis, treatment and management’, 2017). Bronchiectasis is one of a complex chronic respiratory condition initially characterized by recurrent infection, airway inflammation, and involves decline in lung function (McCullough *et al.*, 2014).

Many different kinds of things may even cause bronchiectasis. In some cases it may be caused by a bad infection, such as pneumonia or by childhood whooping cough. This is also known as post-infective bronchiectasis(McCullough *et al.*, 2014). Other conditions that are frequently linked to or can cause bronchiectasis are severe asthma complicated by an allergic reaction to a fungus called as allergic bronchopulmonary aspergillosis or even by conditions where the immune system attacks the entire body, like rheumatoid arthritis or ulcerative colitis(Hohmann, 2019).The basic

treatment of this bronchiectasis is usually the normal usual treatment, no matter the cause(Subotic and Rademacher, 2018). However, some causes call for a specific type of additional treatment. CT (computed tomography) test is needed mainly to diagnose bronchiectasis. This is where your body is X-rayed at a different number of angles before a computer puts together a detailed image(Altenburg *et al.*, 2015). Chest infections, also known as exacerbations. Other symptoms may even get worse during an infection. Physiotherapy and airway clearance exercises may help in clearing mucus from the human body.

Early diagnosis and intensive treatment protocols can equalise or can even improve the clinical prognosis in children with bronchiectasis(Shteinberg, Johnson and Haworth, 2018). The defining symptom common to children with bronchiectasis can be chronic wet cough. Region-specific studies mainly suggest that geographic locality and socioeconomic environment plays an important role in determining the etiology of bronchiectasis in children(Eric Gershwin and Albertson, 2008). The term orphan disease should be considered as redundant for the bronchiectasis condition. Many different types of studies have reported that increasing prevalence, particularly in indigenous populations, have highlighted the limited evidence base for therapeutic decision-making. However, it is mainly concerned that many recent clinical trials particularly of inhaled antibiotics have not achieved their primary endpoint. Previously, our team had conducted numerous studies which included others . Our team has extensive knowledge and research experience that has translate into high quality publications(Dinesh *et al.*, 2013; Krishnan and Lakshmi, 2013; Muthukrishnan and Warnakulasuriya, 2018; Sekar *et al.*, 2019; Gomathi *et al.*, 2020) (Sathivel *et al.*, 2008; Panda *et al.*, 2014; Govindaraju, Neelakantan and Gutmann, 2017; Johnson *et al.*, 2020; Saraswathi *et al.*, 2020).The aim of this study is to create awareness on treatment protocols with bronchiectasis.

MATERIALS AND METHODS:

A cross-sectional observational study was conducted among the dental colleges students. A total of 100 students were randomly sampled and who voluntarily participated in the study; the subjects were fully informed about the design and purpose of the study. All the students were numbered serially and a stratified random sampling method was conducted. A written informed consent is obtained from each participant and anonymity of the participants are maintained throughout the study. Data was collected based on a pre-tested structured questionnaire distributed among the students in the classroom who were asked to fill the questionnaire. The questionnaire included a full range of response options designed to easily identify the practitioner's knowledge, awareness, and compliance with universal precautions in the health sector. Minor changes were done to the final instrument. The questionnaire consisted of 10 questions to assess the knowledge and awareness towards sharp instrument injury. The sampling method used here is a convenient sampling method. Method of representation of data is Pie chart, Bar Charts. Statistical tests used are Descriptive statistics. Independent variables can be Age, Gender, Risk factors, treatment techniques, advanced sharp instruments. Dependent variables can be awareness, interaction, knowledge, attitude, perceptions.

RESULTS:

In the current study the questionnaire was circulated on the basis of knowledge, attitude and practice. The data is collected and statistically analysed. 38% of the participants were female and 62% of the participants were male. Majority of participants (59%) agreed with the statement bronchitis can lead to pneumonia if you don't seek treatment (Figure 1). 59% of the participants agreed that when you cough, you might also notice that your phlegm looks green or yellow. (Figure 2). 70% of participants experienced that most people get over an acute bout of bronchitis in two to three weeks (Figure 3). Majority of participants (68%) agreed with the statement that one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more. (Figure 4). 62% of participants agreed that acute bronchitis usually gets better on its own—without antibiotics. 66% of participants are aware that although a single episode of bronchitis usually isn't cause for concern, it can lead to pneumonia in some people. 68% of participants agreed that cold temperatures can trigger symptoms such as wheezing, coughing, and shortness of breath (Figure 5). 77% agreed that Coughing and blowing your nose are the best ways to help mucus fight the good fight. Majority of males (34%) and females (14%) knew that coughing often becomes worse at night because a person is lying flat in bed (Figure 6). Majority of males (43%) and females (17%) knew that one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more (Figure 7).

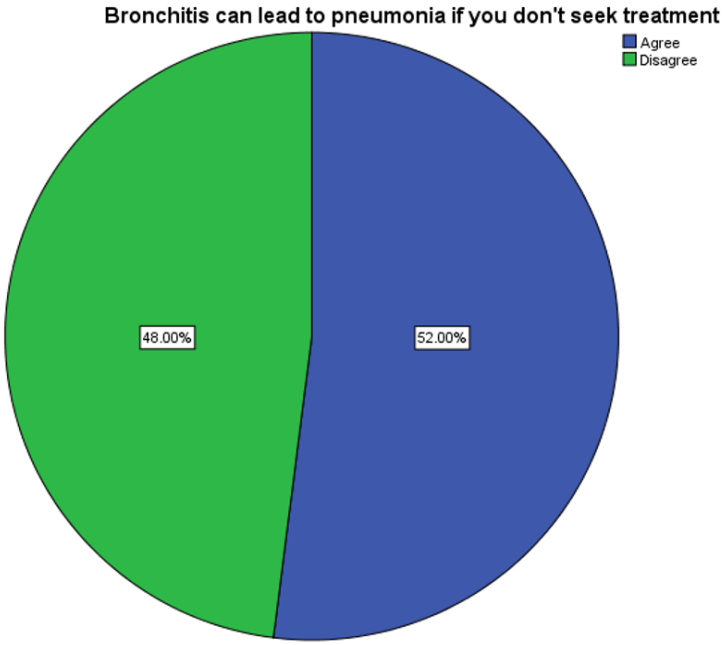

Figure 1: Pie chart showing percentage distribution of responses for knowledge about bronchitis can lead to pneumonia if you don't seek treatment. 48%- Disagree (blue); 52% - Agree (green). Majority of participants (52%) agreed that bronchitis can lead to pneumonia if you don't seek treatment.

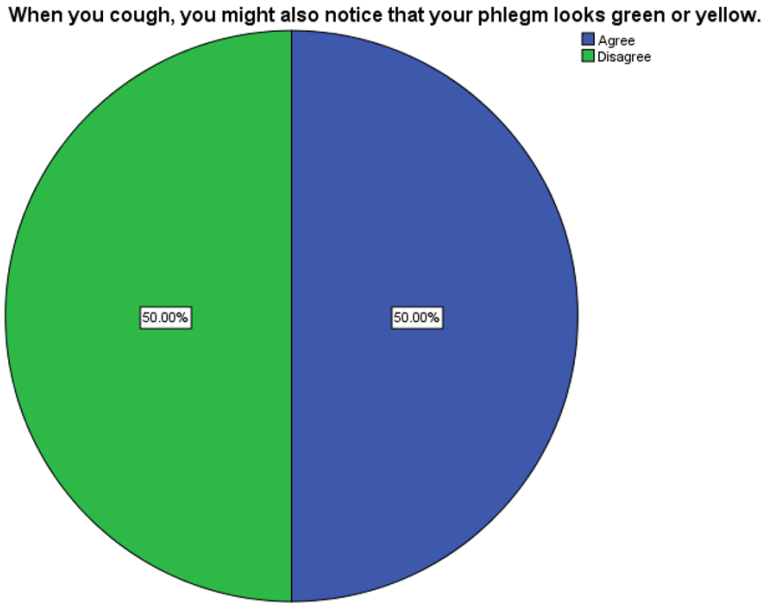

Figure 2: Pie chart showing percentage distribution of responses for statement when you cough, you might also notice that your phlegm looks green or yellow. 50%- Disagree (blue); 50% - Agree (green). Majority of participants (50%) agreed with the statement's when you cough, you might also notice that your phlegm looks green or yellow.

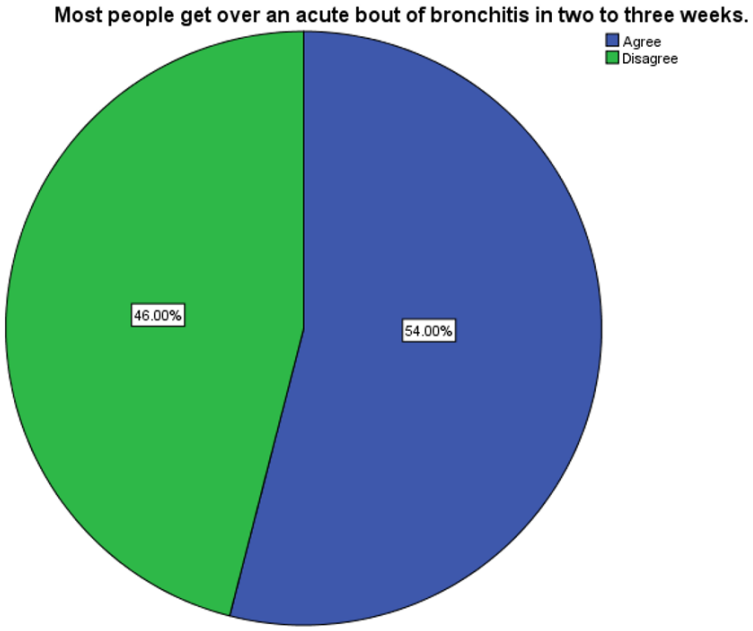

Figure 3: Pie chart showing percentage distribution of responses for involvement of knowledge about the most people who get over an acute bout of bronchitis in two to three weeks.. 46%- Disagree (blue); 54% - Agree (green). Majority of participants (59%) agreed with the statement's most people get over an acute bout of bronchitis in two to three weeks.

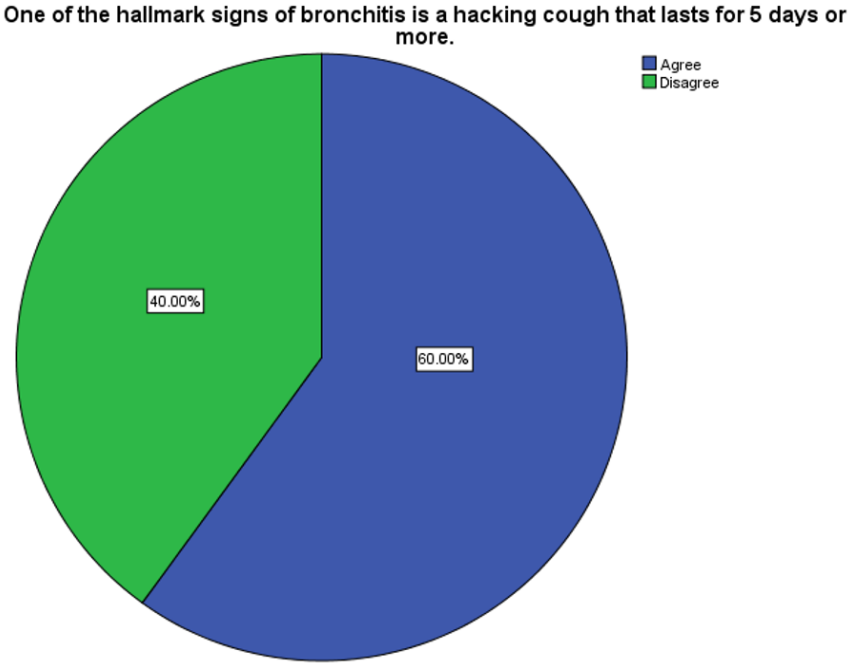

Figure 4: Pie chart showing percentage distribution of responses for involvement of knowledge that one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more. 40%- Disagree (blue); 60% - Agree (green). Majority of participants (60%) agreed with the statement's one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more.

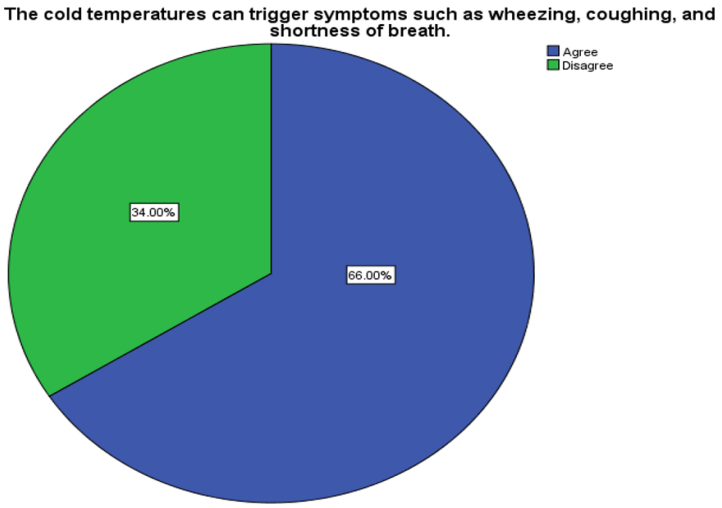

Figure 5: Pie chart showing percentage distribution of responses for The cold temperatures can trigger symptoms such as wheezing, coughing, and shortness of breath. 34%- Disagree (blue); 66% - Agree (green). Majority of participants (66%) agreed with the statement that cold temperatures can trigger symptoms such as wheezing, coughing, and shortness of breath.

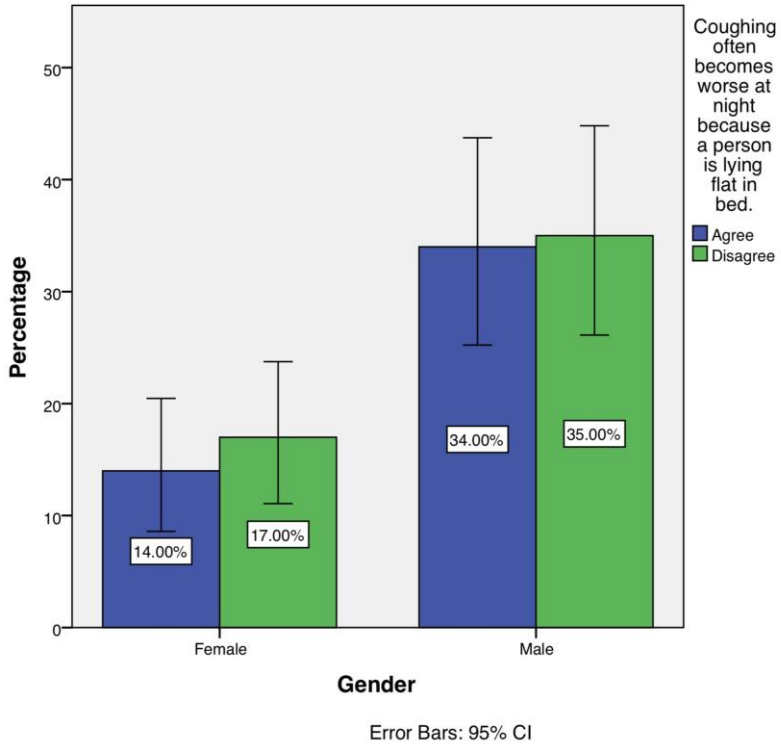

Figure 6: Bar graph showing the association of responses based on different gender to the awareness of coughing related problems, where blue denotes agree and green denotes disagree. X axis represents gender and Y axis represents percentage. Out of 100 participants, 14% of females reported that coughing often becomes worse at night because a person is lying flat in bed, whereas 34% of male reported that coughing often becomes worse at night because a person is lying flat in bed. Majority of males (34%) and females (14%) knew that coughing often becomes worse at night because a person is lying flat in bed. The analysis showed that the level of awareness among males and females was similar. Chi square value=0.187; P value= 0.745 ($p>0.05$, hence statistically not significant).

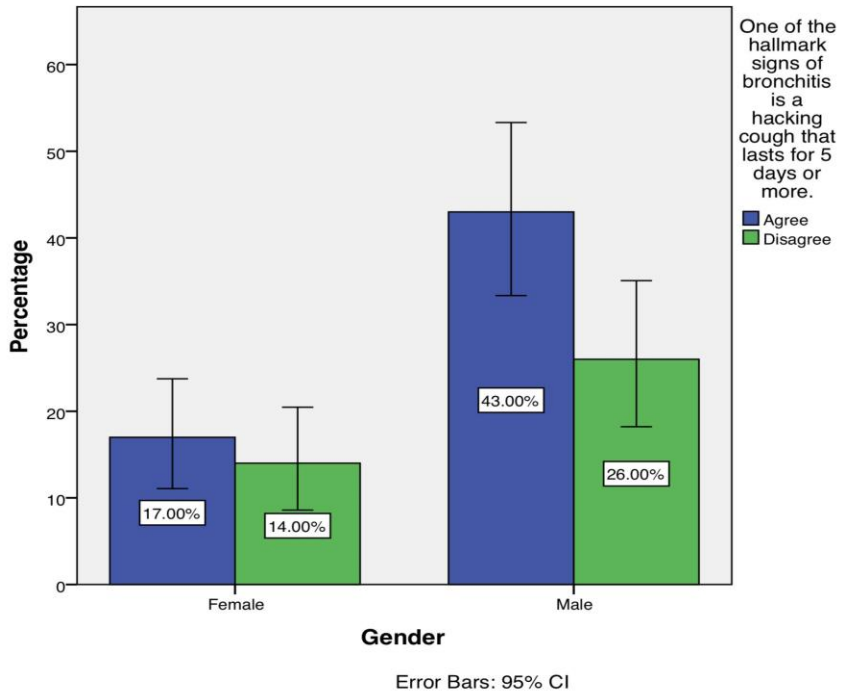

Figure 7: Bar graph showing the association of responses based on different gender to the awareness of signs of bronchitis, where blue denotes agree and green denotes disagree. X axis represents gender and Y axis represents percentage. Out of 100 participants, 17% of females reported that one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more, whereas 43% of male reported that one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more. Majority of males (43%) and females (17%) knew that one of the hallmark signs of bronchitis is a hacking cough that lasts for 5 days or more. The analysis showed that the level of awareness among males and females was similar. Chi square value=1.645; P value= 0.637 (p>0.05, hence statistically not significant).

DISCUSSION:

Bronchiectasis is the final result of various diseases that share principles of management. The clinical course usually involves chronic bronchial infection and inflammation, which are associated with progression(Martínez-García *et al.*, 2020). The cause of bronchiectasis must always be investigated, specifically when it can be treated. Recommends by evaluating etiology, symptoms, bronchial colonization and infection, respiratory function, inflammation, structural damage, nutritional status, and also quality of life in order to assess severity and to monitor clinical course. Inconsistency between the trials suggests further research is needed into the heterogeneity of bronchiectasis and optimal outcome measures for inhaled antibiotics.

Previous studies by ZP Onen et al, gives that diagnosis has revealed that bronchiectasis has been under-diagnosed. Mainly for this reason the exact prevalence of bronchiectasis is unknown but the incidence has decreased in developed countries with declining incidence of pulmonary tuberculosis, immunization and effective antibiotic treatment in childhood infections(Esquinas and Lemyze, 2017). The average age at death has also increased during the last decades and the causes of mortality are now mostly related to respiratory failure(Chalmers, Polverino and Aliberti, 2018). Another study by MÁ Martínez-García et al, mentioned that bronchiectasis remains more common and still the frequent leading causes of death in many developing nations(Martínez-García *et al.*, 2018). Many studies have analyzed the dangerous effects of microorganisms in the sputum of patients with bronchiectasis, a few studies used some of the quality of life questionnaires to improve the health-related quality of life status but to date no study has assessed the prospective long-term predictors and survival analysis of the patients with bronchiectasis(García, Carro and de Gracia Roldán, 2009).

Another study conducted by A Bushet al, of 100 students completed the questionnaire; of these students,30% were female and 70% were male. The male to female ratio was 2:1; mean age of total respondents was 25 years .The study found significant differences in age of male and female patients ($P<0.01$). After applying the Z test for the difference between two sample proportions, a significant difference was noted between knowledge of treatment protocols with bronchiectasis injury for all statements in regards to correct and incorrect (ie, $P<0.05$) . On an average,90% were correct and 10% were incorrect for knowledge about treatment protocols with bronchiectasis. 80% agreed that bronchitis can lead to pneumonia if they don't seek any treatment(Rubio, Moreno and Cabrerizo, 2004; García, Carro and de Gracia Roldán, 2009). 60% agreed that coughing often becomes worse at night because a person is lying flat in bed. 65% agreed that most people get over an acute bout of bronchitis in two to three weeks. 75% agreed cold temperatures can trigger symptoms such as wheezing, coughing, and shortness of breath. 60% agreed that coughing and blowing your nose are the best ways to help mucus fight the good fight. 40% agreed acute bronchitis usually gets better on its own—without antibiotics.

The limitations for this study can be Survey fatigue, Online survey,Increase in sample size,and Inclusion of more criteria. This study on awareness on treatment protocols with bronchiectasis of 70%. Although still in the very early stages of development, cell therapy is one of the biggest hopes towards developing a cure for injuries, especially for both sharp instruments and needle sticks. Complications that arise should be treated immediately.
In future, more concern should be given for the treatment of bronchitis. Care should be given by specialized units, when there is a history of chronic bronchial infection, recurrent exacerbations, and also for a cause that is likely to respond to treatment. The two goals of management are improving symptoms and halting progression, which is based on treatment of the underlying cause and for both acute chronic infections and on the drainage of secretions.

CONCLUSION:

This review considers the evidence for both defining and also treating bronchiectasis, the approaches for eradication of newly found airway pathogens and the methods to prevent exacerbations through long-duration treatments from a pragmatic practice-based perspective. Antibiotic prescription is guided by checking how well infection can be controlled, and this is indicated by seeing the color of sputum and a reduction in the number of exacerbations. The two goals of management are improving symptoms and halting progression, which is based on treatment of the underlying cause and for both acute chronic infections and on the drainage of secretions. Majority of males are more aware of bronchiectasis than females.

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