

Bronchiectasis Patient Conference Q&A

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Airway Clearance

Can the very act of daily and aggressively hacking up mucus paradoxically be instigation for the bronchi to react by scarifying or embrittling?

Technically yes. However, this is unlikely. Hacking is a voluntary (differing from coughing which can be both voluntary and involuntary). Many airway clearance techniques, when performed correctly are aimed at balancing the sheering force required to clear the mucus without causing damage to the bronchi.

Do deep breathing exercises cause damage to my respiratory system with bronchiectasis? Thinking of 'Wim Hof' type breathing.

Wim Hof is an extremely specific type of breathing exercise using "hyperventilation." I would not recommend this for bronchiectasis. Hyperventilation would not cause "damage" to your lungs, but it would give you symptoms of light headedness, dizziness, and nausea.

Does pursed lip breathing help?

Pursed lip breathing is a way to ease difficulty breathing, but now recommended as a method to clear mucus.

Does research show we should always nebulise saline daily for bronchiectasis? Or is it ok to nebulise saline once every few days if we find that optimises management of our symptoms?

Airway clearance is very personal to the individual and should be discussed with your doctor/physio. I tell my patient that what is right is what works for you! The important thing is that you can clear the mucus and feel clear every day. Some people need to nebulise every day to do this, some people do not and can clear their chest with airway clearance exercises or physical exercise.

Harmonica is amazing too. Do you recommend that?

Anything that works to get you breathing deeply is good!

How can we reduce amounts of sputum where volume is a problem?

It is important to look for reasons that might be causing the big sputum volume like a chronic infection or a complication like ABPA. If this is excluded, treatments which can help cough and sputum include

- Regular airway clearance and exercise
- treatments to help mucus become easier to cough up e.g. hypertonic or isotonic saline
- treatments that help sputum become less thick e.g. N-acetylcysteine or carbocisteine
- Reducing inflammation, e.g. macrolide antibiotics or in certain types of inflammation, inhaled steroids
- treating nasal disease as drip from the nose can exacerbate cough

How do we protect our bowel from prolapsing when do our lung clearance, huffing and coughing? I find it extremely hard on my insides but must do my clearances.

The best way to help here is to work on building a good strong pelvic floor with regular pelvic floor exercises as part of yoga or Pilates. There are many physiotherapists who specialise in this area and can advise further and provide information around specific exercises and some devices that can be helpful.

How often one should do airway clearance?

Every day and sometimes several times a day. It depends on your bronchiectasis, but it is important to clear as much sputum/secretions from your chest as you can and the number of times you must do chest clearance may vary depending on your condition. If possible, you should ask for a consultation with a physiotherapist who specialises in chest conditions and work out a plan for you.

How to produce sputum “on demand” for repeated tests?

Some people cough up sputum only later in the day when the labs do not take samples in. You can practice your airway clearance before taking the test. You can also take empty pots home and fill them, in the morning before delivering. As a last resort, it is OK to refrigerate samples for up to 12 hours which is not perfect but better than nothing at all!

If you nebulise hypertonic saline 7% 1 or 2 a day, could this influence hypertension in a negative way?

Usually not, it is minimally absorbed. But good to check if you have high blood pressure.

Is a vibrating vest useful for Bronchiectasis patients to clear excess mucus?

There are lots of different airway clearance methods and vests are very popular in some parts of the world (particularly USA). There is no evidence that one way of doing airway clearance is better than another. It is individualised to the patient. What works for you is best!

Is it better to take inhalers an hour or more before doing nebulisation (to open the airways), rather than afterward?

Yes, it is best to take bronchodilator treatments before doing nebulisation, so the airways are "ready" and open for the nebulised medicines.

Is it possible to have a vibration vest for in home usage to be able to clear airways?

There is a clinical trial in the UK looking into the effectiveness of the Vest now. It is not routinely given out in the UK as there is no evidence of significant benefit over other airway clearance techniques. In other healthcare systems they are available, this will be dependent on your health system or insurer.

Is nebulising helpful for anyone with bronchiectasis?

No, in general there is no treatment for bronchiectasis that is useful for everyone. Everyone is different. Only about 1 in 20 people with bronchiectasis use a nebuliser for airway clearance. It can be helpful for people who still have sputum problems despite doing airway clearance exercises.

Is there any sense in using 3% hypertonic saline supplemented with Hyaluronic Acid (lung protection?) instead of just 6% saline hypertonic for nebulisation?

There is some evidence that addition of 0.1% hyaluronic acid can improve tolerance of hypertonic saline (6-7%) for people who are or were intolerant using hypertonic saline via nebuliser alone.

Is there anything you can do to stop you being sick when doing airway clearance, or is this a sign that you are doing your airway clearance incorrectly? (active cycle techniques being used now)

I would want to investigate why you are being sick? It could be timing of clearance (do it before eating or >4 hours after food), technique (if huff or cough too hard, can irritate upper airway) or possibly the thickness of your mucus (medication to support this.)

Is there evidence to support the use of Buteyko or nose breathing practice on Bronchiectasis?

I am not aware of any trials or robust evidence for Buteyko or similar techniques in bronchiectasis.

Should you spit out your mucus or is it ok to swallow it?

It is not harmful to swallow it (people without bronchiectasis produce a small amount of mucus and swallow it every day). Some people say that if there is a large volume of mucus, they find it unpleasant to swallow it.

What is isotonic saline?

It is a slightly salty solution which is put in a nebuliser to help coughing and help people to bring up mucus.

What options for lung prophylaxis are available for people who cannot do the necessary hygiene themselves? / In an emergency, can lung clearing be performed mechanically (i.e. via suction) by hospital clinicians? / What do people with moderate to severe bronchiectasis do when serious accident or illness prevents their being personally able to clear their own airways?

Yes – if sputum accumulates to the point where it is preventing enough oxygen into the lungs and a patient is incapable of clearing themselves, in an emergency, hospital teams can use treatments including (but not limited to) suctioning. This is very rare. If a patient has a weak cough, there are mechanical devices that can be used both by health professionals and given to patients to use themselves, to help them take deep breaths and support their coughs. Different versions of these machines are available in different countries.

In Germany there is a physiotherapy treatment called Reflektoren breathing therapy. I benefit from it, and I wonder if it is known outside Germany.

I have not heard of this.

Causes

Can bronchiectasis be congenital?

There are genetic causes to bronchiectasis but often it becomes evident in childhood after inflammation and infection is established.

Can Chronic asthma be the cause of bronchiectasis?

Yes, we see up to 30% of patients with severe asthma who have bronchiectasis, so it is thought to be a possible cause.

Could hypothyroidism lead to bronchiectasis?

There is no known link between hypothyroidism and bronchiectasis. Many other autoimmune conditions like rheumatoid arthritis are linked but a link with thyroid disease has not been found

Have any genetic causes been identified with bronchiectasis?

We are starting to understand bronchiectasis causes better. Genetic causes are being found more often (but are a minority of cases). PCD (Primary Ciliary Dyskinesia) and CF (Cystic Fibrosis) are the two most common genetic causes.

How common is Mounier Kuhn Syndrome?

Not frequent, but certainly tied to bronchiectasis. It is one of the rarer causes.

Is there a link between Bronchiectasis and pinched phrenic nerve at shoulder level?

It is possible. Phrenic nerve damage can cause the diaphragm to pull up and make the lungs smaller.

Is there any links to bronchiectasis with those who have had their tonsils and adenoids removed in childhood due to repeated tonsillitis infections?

Repeated infections in childhood can be a risk factor for bronchiectasis but these two things are not necessarily linked (since tonsillectomy is quite common and most do not develop bronchiectasis.)

Is there any prophylactic measure for prevention of bronchiectasis?

This needs research. In many cases we do not know what causes bronchiectasis so to do not know how to prevent it.

Is there evidence of mercury poisoning through tooth fillings or from the material in dental implants causing bronchiectasis?

Not currently and sounds unlikely.

What is the relation between bronchiectasis and lung emboly?

Any cause of lung damage can theoretically be a cause of bronchiectasis. Lung emboli can damage the lung. It is not a common cause but could be linked.

When I was 9 months, I got Bordetella pertussis, could this bacterium cause bronchiectasis at 43 years old?

Many people with bronchiectasis have had symptoms since early childhood. We sometimes link these to a history of childhood infections like pertussis.

Clinical trials

Are there any studies on mucus? E.g., defining normal lungs production per cm? normal travel time

Yes, we have those studies, they are part of what we call lung pathophysiology. They are quite complex and needs training.

Are there trials taking place for drugs like Kaftrio, that seem miraculous for many cystic fibrosis patients, for people with bronchiectasis?

There is logic in Kaftrio/Trikafta for people with bronchiectasis. This is being tested in a clinical trial.

Does an FEV1<30% predicted mean you are excluded from most clinical trials in bronchiectasis?

Some clinical trials limit participants with very low lung function but not all trials.

Has research shown benefits from taking N-Acetyl L-Cysteine in removing sputum?

There is one small trial from China which showed it had some benefits. There is a bigger trial in the UK which should report results very soon and will tell us what the benefits are. It is meant to break down the mucus making it less thick.

Would you recommend participating in a clinical trial when someone's bronchiectasis is stable?

There are lots of different types of clinical trials. Some are only for people who are struggling, some are suitable for people with more stable disease. So yes, discuss research with your doctor if you are interested.

Comorbidities

Any research on PCD (primary ciliary dyskinesia) including bronchiectasis and myelodysplastic syndrome with low blasts?

Not aware of any link between PCD and myelodysplastic syndromes but new things are being learned about PCD all the time as many genes have not yet been discovered and some have functions outside the lung.

Are there any changes to treatment/care for patients with Bronchiectasis if they also have Pulmonary Fibrosis - restricted lung disease?

Bronchiectasis in pulmonary fibrosis is sometimes caused by the fibrosis itself. There are specific drugs now available to treat fibrosis and prevent the progression of the lung damage in those conditions.

Are things like hypermobility linked with bronchiectasis in any way?

There is one study which shows that genes related to hypermobility and connective tissue diseases are linked to bronchiectasis and NTM (Non-Tuberculous Mycobacteria) so there is a scientific link although still being studied.

Are you aware of any autoimmune disease links with bronchiectasis?

Some autoimmune diseases are associated with bronchiectasis. Investigation and/or consulting an immunologist is advised.

Can taking Biologics for Asthma help reduce Bronchiectasis exacerbations?

There is a small study suggesting that the answer is YES, and a larger clinical trial going on about a biologic medicine usually used for asthma but in patients with bronchiectasis.

Can you explain more about Chronic Rhinosinusitis and nasal polyps and the relation it has with

It is all one airway, so inflammation affecting the lungs also affects the nose. 70% of people with bronchiectasis have some nasal symptoms if you look carefully.

Do many patients with bronchiectasis also have Barratt's oesophagus?

Barratt's is usually caused by chronic reflux which is very common in bronchiectasis.

For PCD patients, is there a much higher risk for ectopic pregnancy?

It has been suggested, but we do not know the exact percentage that this happens and whether the risk is higher than in women without PCD.

How do you minimise reflux? And what is your thought on sleeping at a 30% elevation?

Lifestyle measures like losing weight, eating dinner earlier and reducing alcohol and caffeine (which cause more reflux by relaxing the stomach sphincter) can help reduce reflux. Occasionally sleeping more upright may be needed to reduce reflux as part of overall lifestyle measures.

How often statistically do COPD (Chronic Obstructive Pulmonary Disease) and bronchiectasis coexist? Than

Depending on how it is defined about 25% of bronchiectasis patients have COPD, and a similar proportion of people with COPD have bronchiectasis.

I have stress incontinence caused by cough. I do pelvic floor exercises but is there anything else I can do when I have an exacerbation and my cough gets worse?

This is a very troublesome problem. Apart from pelvic floor exercises, managing your bronchiectasis so you cough less might help this, but it is difficult.

I have bronchitis, COPD and just have been diagnosed with sleep apnoea. What affect if any will this have on my other condition.

Sleep apnoea can make you more tired and interfere with your sleeping as well as make it harder to do other things day to day. Treatment for sleep apnoea if you are sleepy/lacking in energy can be beneficial.

I have BX, COPD & an Immune deficiency Panhypoglobulinaemia. I have weekly infusions of immunoglobulin that has really improved my symptoms. However, I also take azithromycin daily. I am currently trying to take them 3 times a week with the view to stopping altogether for the summer months in the UK. This was suggested last year by my consultant. Is stopping and starting antibiotics something I

We do not comment on individual cases, as these are best addressed by your care provider, however, it would be common to use antibiotics in an "on-off" regime where appropriate.

Is "traction" bronchiectasis the same as normal bronchiectasis?

Traction means that the lung has been "pulled" by another abnormality in the lungs, sometimes fibrosis or damage to the lungs from an infection. Traction bronchiectasis can behave like "normal" bronchiectasis or can be milder with less sputum production.

Is Degenerative Disc Disease and Cervical Spondylosis related to the Osteoporosis or Bronchiectasis?

Not specifically, a but both degenerative disc disease and cervical spondylosis are common in general and with age so it would not be unusual to see them in patients with bronchiectasis or osteoporosis.

Is inflammation the reason that I suffer with a hoarse voice for some weeks before a full blown

This could be due to the inflammation or due to an increase in mucus causing more coughing (and coughing irritates the vocal cords leading to hoarseness)

Is there a connection with sleep apnoea and CPAP (Continuous Positive Airway Pressure) use and bronchiectasis?

CPAP is a very effective treatment for sleep apnoea. A connection with bronchiectasis has not been established.

Is there a difference in treatment of bronchiectasis for PCD patients? Is there treatment research going on specifically for PCD patients?

Airways clearance and nasal lavage are more important than in any other kind of bronchiectasis and a lot of research is going on but still no drugs have been approved specifically for PCD (if not for bronchiectasis)

Is there a special link between osteoporosis and hypertension to BE?

Osteoporosis is common in bronchiectasis. Hypertension is not specifically linked but is obviously very common in older people.

Is there an association (causal in both directions) between MGUS (Monoclonal Gammopathy of Unknown Significance) and NTM or Bronchiectasis?

MGUS can be associated with a mild immune deficiency so it is possible that they can be linked, although they can also occur in the same person unrelated.

Is there any connection to inflammation in tendons?

Usually there is no connection, but the use of quinolones (a specific kind of antibiotics including ciprofloxacin) can cause tendinitis and it can be dangerous.

Is there evidence of worsening bronchiectasis in those of us with chronic sinusitis alongside bronchiectasis who are colonised in sinuses with bacteria?

The connection is well known and one can drive worsening of the other. In these cases, a multidisciplinary team is useful in having both ENT (Ear, Nose, and Throat) and pulmonologist working together.

Is there specific research about IBD (Inflammatory bowel disease) and bronchiectasis? And psoriasis and bronchiectasis?

There is no known link known between psoriasis and bronchiectasis, but IBD is strongly linked (particularly ulcerative colitis).

Maintaining low inflammation throughout the body, does this help keep the number of exacerbations low?

When there is an inflammatory disease like rheumatoid arthritis, reducing the inflammation in the body helps to reduce exacerbations. We think this is true for bronchiectasis, which is the rationale for some of the research studies currently taking place.

My sinuses are permanently infected, only clearing when I am on an antibiotic for an infection. Any advice?

We cannot provide medical advice directly, but some things that are effective for severe nasal and sinus disease

- Sinus rinses and nasal steroid
- ENT review/sinus surgery/removal of polyps
- long term macrolide treatment

Please can you clarify the connection between bronchiectasis and reflux?

People who have bronchiectasis and reflux tend to have more lung inflammation because some of the stomach contents can irritate the lung and this can lead to more symptoms and exacerbations. Doctors should try to treat reflux when it is found in people with bronchiectasis as it can help the chest.

Suggestions to decrease overall inflammation and keep inflammatory markers normal?

This is a challenging question as different parts of the immune system contribute to different types of inflammation. Preventing infection, eating healthy, especially food packed with antioxidants and awaiting the upcoming Phase III trial results of the new anti-inflammatory agents is probably the best current situation.

What are the signs that inflammation is a problem and how can we reduce it?

Signs of a lot of inflammation include coloured sputum or coughing up a large volume of sputum. Airway clearance and exercise can help to reduce it and if exacerbations are a problem, then anti-inflammatory treatments like macrolide antibiotics.

What can I do for my chronic cough?

We cannot provide specific medical advice here but things that can help cough in bronchiectasis include:

- Regular airway clearance and exercise
- Treatments to help mucus become easier to cough up e.g. hypertonic or isotonic saline
- Treatments that help sputum become less thick e.g. N-acetylcysteine or carbocysteine
- Reducing inflammation, e.g. macrolide antibiotics or in certain types of inflammation, inhaled steroids
- Treating nasal disease as drip from the nose can exacerbate cough

What is the percentage of known PCD genes?

There are many genes causing PCD, and new ones are being discovered as research develops. PCD is the cause of bronchiectasis in a minority of patients (about 7%) but probably some cases have PCD but are undiagnosed.

When a patient has severe Asthma, Bronchiectasis, and the pseudomonas aeruginosa bacteria, what is the future for the Asthma and the Bronchiectasis?

When they are together sometimes there are more exacerbations so both the asthma and bronchiectasis need to be treated.

When talking about other lung conditions alongside bronchiectasis why was Fibrosis not mentioned?

The bronchiectasis associated with lung fibrosis are usually associated with different symptoms and little infection/inflammation and therefore are usually considered a different disease. However, it is possible to have both fibrosis and bronchiectasis with sputum and inflammation.

Would rinses help to alleviate symptoms of rhinitis and protect against exacerbations?

Saline rinses of the nose and nasal steroid sprays are some of the treatments that are commonly used to manage chronic rhinitis. We think managing the rhinitis can help reduce lung problems.

Diagnosis

Are frequent CT scans to be avoided due to radiation?

A CT scan is needed to diagnose bronchiectasis, and in smokers it is recommended to repeat to diagnose potential tumours at an early stage. However, there is no recommendation for regular repeated CT scans (in people who do not smoke). While modern CT scanners have reduced radiation, it is still needed to consider what we need to check in the CT and balance with the small risk associated with radiation.

Is it common for UK GPs to label Bronchiectasis as COPD?

This is very common. Around half of bronchiectasis patients who get given the label of COPD, it then turns out the label was wrong.

Is there a prognostic advantage to getting an early diagnosis of bronchiectasis and/or NTM?

Yes, to both.

Exacerbations

How many exacerbations is too many over, say, a year?

We usually recommend preventive antibiotics when there are three or more exacerbations every year, but it is best to avoid them at all. Good airway clearance can help.

General

Is taking Sauna harmful to bronchiectasis?

There have been concerns raised about risk of getting infections with bacteria found in water. However, it is very rare so not recommended to avoid. Relaxing is important and if this makes you relax it has its benefit!

What is the ratio of people with bronchiectasis, according to the countries?

In Western countries the prevalence has been estimated as 0.25-0.5% of adults, so not very rare!

Gut microbiome

What is the role of gut microbiome in bronchiectasis?

There is a study which was published recently: <https://www.atsjournals.org/doi/10.1164/rccm.202205-0893OC>. People with bronchiectasis do have a different gut microbiome, maybe because of frequent antibiotic courses.

Infections

Are we at risk of catching other bronchiectasis patients colonised bacteria as is the case in cystic fibrosis?

There is no evidence of cross transmission in bronchiectasis now, but a face mask is to be recommended anyway.

As a 'new' only one year BE patient with NTM, I am trying to learn as much as I can about this disease and how I can avoid exacerbations. Just had a course of IV Tazobactam via Hosp at Home - to treat pseudomonas. Can you advise on appropriate sterilising of nebuliser plastic/acapella and Ventolin spacer. There are lots of ways, but I hope your experts will know the best and most effective to kill to accumulated bacteria and how often.

Most methods of sterilisation will be sufficient to kill the accumulated bacteria. The acapella device should be cleaned in hot (not boiling) soapy water daily. Do not use a dishwasher. It can be boiled without harming parts. I recommend boiling weekly for at least 5 minutes.

Spacer devices - Take your spacer apart and gently clean it with warm water and a detergent, such as washing-up liquid. Only a small number of brands of spacer are dishwasher safe, so check the instructions on the label. Use warm water instead of boiling water, as boiling water may damage the spacer. Be careful not to scrub the inside of your spacer as this might affect the way it works. Nebuliser – this is brand specific. Some nebuliser parts can be cleaned in boiling water, others cannot.

Can using corticosteroids for a long time lead me to get NTM infection?

There is a link between steroid inhalers and NTM infection. Inhalers should only be used when they are necessary in people with asthma or certain types of inflammation.

Does nebulising Colistin work as well as oral antibiotics (azithromycin, clarithromycin) to reduce exacerbations with pseudomonas?

Yes, inhaled antibiotics including colistin reduce the frequency of exacerbations.

How can we prevent and protect against fungal infections?

Fungal infections occur in airways that are plugged with mucus so good airway clearance, exercise and all the things we have discussed today help to reduce the burden of fungus. Once fungus is there it often requires treatment with anti-fungal medicine as it becomes persistent.

How common is bronchiectasis and NTM (non-tuberculous mycobacteria)?

Bronchiectasis and NTM is quite common. About 10% of bronchiectasis patients are thought to get NTM at some point. And most people with NTM have bronchiectasis. The frequency is different in different countries. NTM is more common in the US and Asia than in Europe.

How does one distinguish between infection and colonisation? E.g. when do you need to go on antibiotics?

This is based on symptoms. If you feel well and symptoms are stable (your baseline) then even if sputum culture is positive, you must be tolerating the bacteria which is what we usually mean by colonisation. When symptoms are worse or hard to manage, it suggests inflammation is out of control and a treatment is needed.

How much of a recognised problem is Proteus Mirabilis?

We do see Proteus and other gut bacteria as persistently infecting people with bronchiectasis and causing exacerbations.

How often should a person with bronchiectasis be vaccinated against COVID-19?

As a person with a chronic respiratory disease, it is important to follow official recommendations. There is a study showing that severity of COVID-19 is slightly increased in people with bronchiectasis compared to people without bronchiectasis: [https://journal.chestnet.org/article/S0012-3692\(23\)05267-4/pdf](https://journal.chestnet.org/article/S0012-3692(23)05267-4/pdf)

How to manage bronchiectasis as being caused by Allergic bronchopulmonary aspergillosis (ABPA)?

Treatment of Allergic bronchopulmonary aspergillosis (ABPA) is different to conventional bronchiectasis. If ABPA is active, we use steroids with or without antifungal treatments. Sometimes antibody injections are used.

How to manage bronchiectasis with pseudomonas?

When there is a pseudomonas infection causing many exacerbations, we may prescribe preventive antibiotics by inhalation or by mouth.

Is inhaled tobramycin considered effective against pseudomonas? For how long is it common for patients to take it? Can one take it for all their life?

Yes, inhaled antibiotics like tobramycin have been shown to reduce the risk of exacerbations in people with pseudomonas. They can also help symptoms. It can be taken long term

Is there any evidence for phage therapy (which uses bacterial viruses (phage's) to treat bacterial infections)?

There are trials going on of phage treatment for pseudomonas now. It is at quite an early stage.

Is there any issue with chronic presence/colonisation of Staphylococcus Aureus in bronchiectasis patients? (detected in every sputum culture)

Yes. It is one of the most common organisms found in the sputum of people with bronchiectasis. It can indicate the presence of underlying causes (like ABPA and CF that have been mentioned today). If they are not present it might require specific treatment.

Is there any link between Bronchiectasis and COVID-19?

There have been some reports of bronchiectasis after COVID-19 and in theory any severe infection in the lungs can cause bronchiectasis, so it is likely there is a link. People with bronchiectasis have a slightly higher risk for severe COVID-19 if infected: [https://journal.chestnet.org/article/S0012-3692\(23\)05267-4/pdf](https://journal.chestnet.org/article/S0012-3692(23)05267-4/pdf)

I have read that in research it was found that people that were taking montelukast (for asthma) had fewer or no COVID-19 infections. Is that accurate?

It has not been proven that any treatments completely prevent COVID-19 infections. Asthma patients seemed to be at lower risk of some complications, and this has been linked to some of the treatments (inhaled steroids or montelukast) in some studies.

Should bronchiectasis patients avoid gardening because of the risk of pseudomonas?

I do not advise patients to avoid gardening. If you enjoy gardening its good for quality of life and for physical activity. Pseudomonas is found in lots of places (not just soil) so is almost impossible to avoid in the environment.

Should I take extra precautions when visiting the USA to avoid catching NTM/pseudomonas?

NTM are reported to be frequent in some areas of USA, not everywhere but bottled water is surely safer for any condition, but I would suggest not to worry too much as this infection requires many microbes to enter the lungs and this is unlikely.

Should patients stick to the 2-week antibiotic protocol schedule even after exacerbation symptoms remise or completely disappear after 3 or 4 days?

We advise patients to finish the antibiotic course once it has been started, so if you have been prescribed two weeks, we would suggest finishing the two weeks.

Should you always use a mask when in a group or on an airplane?

It is not compulsory, but you will be more protected when you use it.

We now know other people's bugs are driving several of our exacerbations. In the workplace many are encouraged not to go off sick when they have colds etc. How could we best balance bug sharing of open plan offices with our own needs to avoid people who are sick?

I used to suggest to my patients to use face masks when in the presence of many people in a closed place particularly during flu/covid season.

What do you think on studies that suggest that 7% hypertonic saline inhibits pathogens such as pseudomonas?

Prescribing hypertonic saline by inhalation helps airway clearance. These are results from studies as well as my own clinical experience. By clearing our airways from mucus may - potentially - rid patients of bacteria.

What is the relationship between colonisation/infection and sputum colour/quantity/viscosity?

Colonisation is considered a form of chronic infection but many of us do not consider it a correct definition and rarely chronic infection is not causing disease.

Sputum: the darkest the worst, more abundant and more viscous is also worse.

What is the causal relationship between NTM and bronchiectasis? Could a single episode of pneumonia have caused bronchiectasis?

NTM can cause bronchiectasis and bronchiectasis can predispose to getting NTM. Yes, a bad pneumonia can also cause bronchiectasis.

What is the relationship between bronchiectasis and NTM (MAC) and the best therapeutic treatment for this?

People with bronchiectasis are at a higher risk of getting an NTM infection. It is extremely difficult to know what extent NTM is responsible for the symptoms. For people in whom NTM is contributing to symptoms, treatment with 2, 3 or more antibiotics that kill NTM is usually advised.

What oral antibiotics do you prescribe for preventive pseudomonas colonisation?

Although macrolides are not viewed as being active in killing Pseudomonas, they are effective in reducing symptoms and exacerbations. This is especially so in patients with Pseudomonas infection. The reason may be that macrolides such as azithromycin also reduce inflammation. The other explanation is that macrolides do not kill pseudomonas but reduce its ability to "communicate" with colony members and so reduce its ability to cause severe disease. Other antibiotics are prescribed by inhalation and are directed against Pseudomonas. Regarding colonisation, we now refer to it as "chronic infection" because "colonisation" is a term that suggests no harm and we know it's not the case.

What research has been carried out on outcomes of COVID-19 infections and flu on those with bronchiectasis and chronic rhinosinusitis?

We have conducted such research. People with bronchiectasis have a slightly higher risk for moderate or severe COVID19 so definitely beneficial to be vaccinated. Link to the publication:

[https://journal.chestnet.org/article/S0012-3692\(23\)05267-4/fulltext](https://journal.chestnet.org/article/S0012-3692(23)05267-4/fulltext)

What to do with repetitive infections with Staph aureus?

Airway clearance management sometimes will help to settle symptoms and reduce infection. *S. aureus* can be associated with ABPA and other comorbidities so the doctor should look for possible causes. If there is no specific cause, then occasionally long-term antibiotic treatment can be necessary to prevent exacerbations.

Why is my mucus getting dark in colour again DURING current treatment for Staph Aureus infection after having initially cleared?

Persistently purulent sputum suggests persistent infection and could suggest infection with more resistant organisms. If antibiotics are not helping to clear the sputum it is likely the bacteria are resistant to the antibiotics. I would discuss this with your doctor.

Living with bronchiectasis

Do I have to be more careful with exercise in case of high pressure in lungs?

Exercise generally is good for the lungs. However, Pulmonary hypertension (which can have many causes including severe lung disease) can cause low oxygen during exercise which can be dangerous.

Given how effortful it is to exert when one has bronchiectasis, is cardio-vascular health achieved by even minimal exertion, i.e., are the bronchiectasis patient's daily exertions analogous to a normal person's workout? Or is dedicated, strenuous aerobic exercise the only way to achieve this?

Although it can be very strenuous and effortful for someone with chronic lung disease to do day to day tasks, this is likely to get easier if regular moderate to vigorous activity is incorporated into the week, in combination with some strength work. The more practice our cardio-respiratory system has at working hard, the easier working hard becomes. This seems counterintuitive but the more we make ourselves breathless with exercise the less breathless we get during day-to-day tasks. Starting small and just beginning to push the limits of your breathlessness and doing that regularly will pay dividends. Doing this as part of a group or with support from a physiotherapist or trainer is a good idea to help you know what you can/cannot do and to allow you to see progress. Regular strength work – twice a week, again supported by someone who knows about this – is important as we age, to maintain our muscle mass which helps with overall fitness and with balance and bone health.

How do you cope with shame during coughing up coloured sputum?

You just must try to be discreet with it, turn away, use tissues, carry plastic bags to get rid of the evidence! It is just one of the aspects of bronchiectasis we must put up with, unfortunately.

How many patients can work full-time? And how common is it to get allowance for having bronchiectasis?

Many patients can work, including full-time. Allowance for disability is different between countries, but usually depends on the severity of lung damage.

I get less breathless when I am swimming than when I am walking. Has any research been done into this?

There is no specific research on this. Some people also find they are less breathless swimming or on a bike vs walking and running because of position and load distribution.

I am on supplemental oxygen 24 hours per day. Is it too late to benefit from today's discussions?

No, I hope you will still find some of the advice here useful. People taking oxygen can still benefit a lot from airway clearance exercises, antibiotic treatments, and other parts of the management of bronchiectasis.

Is it possible to travel internationally for work with bronchiectasis?

Travelling depends on how you are. Talk about it with your doctor.

Is swimming a good exercise for someone with Bronchiectasis?

Excellent!

Is there any risk to my health when wild swimming? Am I making myself more open to picking up infections?

There is probably great benefit to your lungs of doing that regular exercise and wild swimming. I am not aware of any increase in risk of bacteria (pseudomonas/NTM) in wild swimmers. These organisms are common in the environment so hard to avoid so on balance I would personally not give up something that you enjoy that benefits you for a theoretical risk of exposure to bacteria.

Is there anything else available – in addition to use of mucolytics, hypertonic sodium chloride, flutter device, percussor vest, and postural drainage – that can shorten the time it takes for effective daily pulmonary hygiene?

The length of treatment is bespoke to each patient depending on average volume of sputum, fatigue levels and time commitments. Unfortunately, there is one treatment to shorten time. I usually advise the use of hypertonic saline & flutter/OPEP in combination to reduce some time.

Talking about exercise, how do we cope when getting older 70+ with arthritic knees etc? And what do you advise as an alternative to walking? I do not mind being breathless, but it is not always possible to walk fast or too far.

Swimming is very good with knee and hip issues because it reduces stress on the limbs. It is a good alternative to walking and can also relax the muscles.

What about those of us with exercise induced asthma?

For most people with exercise induced asthma, it is still advisable to exercise. Just take inhalers regularly, including before exercise.

What kind of exercise is mostly helpful for people with bronchiectasis?

Whatever exercise patients enjoy and would regularly perform is best.

Nutrition

Is dairy (milk, cheese, yogurt) bad for people with bronchiectasis?

Some patients do find this to be the case. If you suspect it may be for you, it is worth excluding dairy for 4 weeks and then re-introducing it. If symptoms vastly improve on the exclusion diet and recur on reintroduction of dairy, then you may want to exclude dairy from your diet (or minimise it) on a longer-term basis. It would be important to take a calcium and vitamin D supplement if you do exclude dairy in the longer term.

Is there any research to suggest foods to avoid (obviously we have heard about alcohol/coffee etc). BUT are there specifically lung diets that can help? Or things to eat?

There is no proof that any specific diet influences inflammation in the lungs. Eating a healthy diet with a lot of fruit and vegetables and low fat/simple carbs seems to help a lot of patients. There is no proven "lung diet" apart from eating healthily.

What is a healthy diet for bronchiectasis?

Many patients find that eating a healthy diet improves their condition. We recommend eating a healthy diet with a lot of fruit and vegetables and less fat/simple carbohydrates. Good for the heart and the rest of the body too!

Progression

Does early detection of bronchiectasis have any influence on its rate of progression??

We have data that link a longer disease duration to lower lung function; for this reason, we think it is important to recognise and treat bronchiectasis when it is early and before complications such as infections occur.

Symptoms

Are antibiotics causing tinnitus and hearing loss?

This is a concern with macrolides (azithromycin) although not very often, and more often with amikacin, especially when given intravenously. With amikacin, using once daily and in the morning and using Nacetyl cysteine (a pill) may minimise these side effects.

Are bronchiectasis symptoms linked with the weather?

Yes, they are. Sudden changes in humidity and pollution can increase symptoms and even trigger an exacerbation. When air is more polluted, we record more exacerbations.

Are there any tests for silent reflux? And what studies have been done for those suffering with bronchiectasis and its links with silent reflux?

Yes, there are medical tests for silent reflux. Some doctors will do pH tests in the oesophagus or other tests that detect silent reflux when the symptoms are difficult. Because its common sometimes doctors will just try to treat it when the symptoms are very suggestive of silent reflux

Can you fracture or injure ribs from intense coughing?

Yes, but rarely. When this happens, we test for osteoporosis.

Do dehumidifiers help with bronchiectasis?

The right humidity of air helps but it is only one of multiple factors including pollution, which is not corrected by dehumidifiers.

I have become very susceptible to odour from perfumes, scented candles and especially to cleaning products, which can cause bronchospasms. Is this a normal reaction?

Sometimes people can have an overreactive upper airway causing a cough (usually dry/tickly) with those products. It could be inducible laryngeal obstruction or laryngeal hypersensitivity. This can be assessed, diagnosis and often treated by a specialist speech and language therapist or ENT team.

Is it inevitable that symptoms and prognosis will get worse as one ages?

The answer is NO. With effective treatment most people with bronchiectasis usually get better.

Is there any evidence that bronchiectasis symptoms change (worsen) with the menopause?

There is currently no data about this.

I have put on a lot of weight around my middle/under my chest and I am struggling to get rid of it, do you have any tips to get rid of the weight.

This is a tricky question to answer as different things work for different people but, in general: the best methods of losing weight combine changes to diet and exercise in a sustainable way. Many women find that around the menopause they struggle to lose weight or that they gain weight despite no changes to previous dietary or exercise regimes. This is probably the impact of changes in metabolism brought about by changes in hormones. Cardiovascular exercise (running, cycling, walking) is the best exercise to help you burn calories and this would be aiming for 150 minutes a week of moderate to vigorous intensity exercise – this should make you feel out of breath and a little bit sweaty. In addition, there are lots of benefits to strength exercise – so building in a few sessions a week of this can be very useful. It may be worth seeking advice from a personal trainer to help structure a programme for you. Diet wise my big tip is to look at the composition of your meals. Aim for half your plate to be fruits/veggies, a quarter whole grain carbs (couscous, bulgar wheat,

brown rice) and a quarter to be protein. Most people and particularly women, do not eat enough protein. Protein keeps you feeling full and is an important fuel source. Small, sustainable changes built up over time are much more likely to result in changes than huge changes introduced all at once.

What can I do to combat the extreme fatigue that accompanies my experience with bronchiectasis?

Rehabilitation and a nutritional assessment can help but you need to make sure the cause of fatigue has been investigated to avoid missing anything relevant such as anaemia for example.

What to do if you have haemoptysis (coughing up blood)? Can we lead a normal life?

Blood in the sputum is a serious symptom so it should always be discussed with your doctor. If this is a persistent thing it does happen in some people, and you can lead a normal life despite occasionally producing a bit of blood. If it is very persistent there are some treatments that can be used to reduce/stop it.

Why can help breathlessness for patients with bronchiectasis?

Breathlessness can be caused by mucus obstructing the airways, or due to damage to the lungs associated with the bronchiectasis meaning you cannot get enough oxygen in. Airway clearance and regular exercise can help reduce breathlessness. Sometimes inhalers can also be helpful.

Treatment

Any long-term studies on safety of inhaled aztreonam?

It is widely used in the treatment of cystic fibrosis where it has been shown to be safe and effective. There are no specific studies in PCD (as ever, there are very few studies specifically in PCD and so we often must base conclusions on CF.)

Any recent research on essential oils inhalation for maintenance in between exacerbations? I use regularly and subjectively believe it does help and lifts the mood

There is no evidence on this.

Are there statistics for resurgence of coughing up blood following lobectomy in patients without comorbidities?

Uncommon, but it can recur if the remaining lungs develop bronchiectasis abnormalities of the blood vessels.

Can macrolides cause tinnitus and if so, what are the alternatives for pseudomonas caused bronchiectasis?? Also are there any studies on gabapentin and vagus nerve irritation contributing to cough with bronchiectasis patients?

Macrolides can cause ototoxicity so tinnitus is possible, and you should mention it to your doctor. Vagus irritation is less investigated specifically in bronchiectasis, but it is known to contribute to cough issues in general. Not aware about gabapentin in all this.

Can the cilia recover when an exacerbation is cleared?

Yes. Ciliated cells are constantly being regrown by the airway so if you can suppress inflammation with effective treatment the mucus glands can reduce, and cilia regrow.

Can you become immune to antibiotics?

Bacteria can develop resistance over time to antibiotics. The human body does not become immune but the bacteria living in the lungs become resistant. This is why preventing the need for antibiotics by doing airway clearance and using non-antibiotic treatments is important.

For post-lobectomy treatment, does it still boil down to exacerbation prevention? Are there any unique complications associated with use of lobectomy to treat bronchiectasis?

We now think about most cases of bronchiectasis as systemic, which means involving the whole body. This explains why, in some cases, bronchiectasis recurs after lobectomy. It is important to keep up treatments after lobectomy to prevent recurrence of complications.

How do I weigh the benefit of reducing the amount of bacteria with ablative or maintenance antibiotics against the risks of a) antibiotic resistance and b) c-difficoides?

These risks must be considered depending on clinical scenario and in a case-by-case approach. If the infections are causing symptoms and further lung damage, then use of antibiotics are warranted, however, if a patient is relatively stable and not experiencing frequent exacerbations – you may consider holding off antibiotics until they are really needed.

How helpful are medicinal herbs, particularly scutellaria baicalensis, in treating bronchiectasis?

There are no studies to support the use of medicinal herbs at the present. Genetic testing is important especially for people with childhood-onset bronchiectasis and in cases of several infected family members.

I have had an adverse reaction (bronchospasm) with inhaled nebulised antibiotics with pseudomonas, and now only take oral ciprofloxacin, does this mean that anything nebulised is not suitable for me

You should discuss this with your doctor as if you have bronchospasm with one type of antibiotic you might not get bronchospasm with a different type of antibiotic so there might still be some treatments that are suitable for you.

If you are on maintenance antibiotics when and what is the best time to take probiotics?

There is no definite answer to this as we do have dedicated studies, however, taking probiotics at the same time of the antibiotics and even continued after their completion would be appropriate.

If you have a medium-severe inflammatory exacerbation caused by Neutrophilic accumulation (green viscous mucus, sputum culture reveals there is no bacterial infection), does it make sense to use antibiotic treatment for 14 days (Septrin)?

Antibiotics can only address bacteria so if there is an overgrowth of bacteria. Septrin (an antibiotic, other names are Resprim and Trimethoprim/sulfamethoxazole) can be useful cause it will reduce bacterial burden and consequent inflammation.

In relatively mild bronchiectasis, which antibiotics are recommended for an 'emergency pack' of first line treatment when a cough gets worse?

Ideally it should be based on sputum tests so if you grow Haemophilus, it would be amoxicillin or doxycycline, if you grow Moraxella, it would be slightly different. etc. But in general, in the UK, we use amoxicillin in people without penicillin allergy.

In terms of the natural history of bronchiectasis, I assume that with recurrent infections, pneumonias, and chronic inflammation, etc there is a progression of bronchiectasis. I am wondering if there is any point in re-assessing the degree of damage to the airways over time with repeated imaging, etc.

Not everyone with bronchiectasis progresses over time. With good disease control we can prevent the progression of the disease for many people. Guidelines suggest performing new CT scans if the condition changes e.g. if symptoms get worse, there is a suspicion of a new infection or otherwise there is another change in condition. So yes, there is sometimes value in reassessing the degree of damage.

In the literature, there have been many studies that suggest that corticosteroid inhalers increase the risk of infections such as pneumonia and tuberculosis. So, is it not counter-intuitive to prescribe these to bronchiectasis patients who have had serious infections? Also, such inhalers make the sputum stickier and thus hard to clear during airway clearance.

Generally true, but some people with bronchiectasis benefit from inhaled corticosteroids, especially when they have asthma, or elevated blood eosinophils.

Is it ok to take a mucolytic long-term?

YES. Very effective and one of the safest medications I know.

Is there a general treatment pathway after diagnosis in Scotland?

In Scotland, patients should be diagnosed by CT scan and then referred to a respiratory consultant for further management which will include airway clearance. Following that first appointment, treatment might be by GPs or patients may remain under specialist care depending on the severity of the condition. It will be different in different countries.

Is there benefit from regular antibiotic use in bronchiectasis? Do we need regular cultures to check for possibly resistant organisms?

Maintenance, preventive antibiotics are recommended when there are multiple exacerbations (usually three or more a year). While these have been proven to improve symptoms and exacerbation, there are downsides to prolonged antibiotics, like tummy upset, hearing loss, and cough (when antibiotics are inhaled), as well as a potential for resistant organisms. It is important to regularly check airway infection especially when treated with long-term preventive antibiotics.

Should mucolytics be used continuously or only when in exacerbation

I generally prescribe mucolytics for all people except the mildest patients. It is a great method to prevent exacerbations, not just treat when they occur.

Stem cell transplant - is it feasible to regenerate the lungs and reduce the inflammatory state?

Unfortunately, we are not at the stage of regenerative medicine that we can re-grow/regenerate lungs but there is research going in this direction. It is at an early stage.

What do you think of long-term azithromycin treatment?

Maintenance, preventive antibiotics including azithromycin (a macrolide antibiotics) are recommended when there are multiple exacerbations (usually three or more a year). While these have been proven to improve symptoms and exacerbation, there are downsides to prolonged antibiotics, like tummy upset, hearing loss, and cough (when antibiotics are inhaled), as well as a potential for resistant organism. It is important to regularly check airway infection, especially when treated with long-term preventive antibiotics. I prescribe azithromycin in my patients when they are still symptomatic and/or have frequent exacerbations despite regular airway clearance.

**What is the benefit of inhaled steroids in bronchiectasis especially those with chronic airway obstruction?
What is the benefit of azithromycin as maintenance treatment for bronchiectasis especially for those patients with recurring admissions, exacerbations and haemoptysis?**

Inhaled steroids are sometimes prescribed. Regarding maintenance, azithromycin (an antibiotic) is usually prescribed when there are many exacerbations, to prevent them.

What is the difference between Macrolide v Polymyxin treatment?

They belong to different families of antibiotics. Colistin is a polymyxin and prescribed long-term by inhalation in bronchiectasis with Pseudomonas infection.

When one is infected by pseudomonas and uses macrolides as an anti-inflammatory agent, is there a risk that the macrolides will kill other bacteria and strengthen pseudomonas presence?

While this is a theoretic consideration, usually we do not see that, and macrolide antibiotics usually benefit people with infections with pseudomonas and other infections.

When you get resistant to certain antibiotics does this mean they cannot help you anymore even in different circumstances or that they will not be able to help get rid of certain bacteria only?

It is the bacteria that are resistant, so, if a certain antibiotic does not help your lung infection it could still work for other infection (for example, urinary tract infections). However, exposing your body to antibiotics can cause bacteria in other sites to become resistant as well.

Vaccination

Can vaccinations make bronchiectasis worse?

Vaccinations make the immune system fight infection. Sometimes you feel a little ill in the few days after the vaccination, but they do not make bronchiectasis worse but help to prevent exacerbations.

What is the timeline for introducing the RSV (Respiratory Syncytial Virus) vaccine for our protection in the UK?

It is going through the process of selecting the vaccine now and then it will be rolled out. In time for this winter.

What vaccinations are recommended for bronchiectasis?

For bronchiectasis patients we recommend that people have vaccination against flu (every year), pneumonia (usually once) and COVID-19.