Insertion of endobronchial nitinol coils to improve lung function in emphysema

Information for the public
Published: 25 March 2015

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What has NICE said?

There is not enough evidence to be sure about how well this procedure works or how safe it is. For this reason, it should only be done as part of a research study.

More research on this procedure is needed and NICE may look at it again if more evidence is published.

What does this mean for me?

Your health professional can only offer you this procedure as part of a research study. Details of your procedure will be collected.

The condition

Emphysema is one of a group of diseases known as chronic obstructive pulmonary disease (or COPD). It is a long-term lung condition in which the small air sacs inside the lung (called alveoli) become damaged. This makes it difficult for the person to get enough oxygen. People with emphysema may have a chronic cough and can be short of breath during exercise or even at rest. They can also feel tired and may have lost weight.

Treatment for emphysema includes advice about stopping smoking, exercise and breathing retraining, and medication. Sometimes oxygen can help. Surgery to reduce the volume of the lungs, or a lung transplant, may be needed if the emphysema is severe.

NICE has looked at using insertion of endobronchial nitinol coils to improve lung function in emphysema as another treatment option.

The NHS website may be a good place to find out more.

The procedure

The insertion of endobronchial nitinol coils is intended to reduce airflow to damaged parts of the lung. This allows air to flow to healthier parts of the lung helping the person to get enough oxygen.

The coils can be inserted while the person is sedated or under general anaesthetic. No cuts through the chest or lungs are needed. Using a flexible tube with a camera on the end (bronchoscope), the doctor inserts a catheter (a thin tube) into the lung through the bronchoscope. A straightened coil is then passed through the catheter, before the catheter is withdrawn.

When released, the coil springs into a set shape, folding in the diseased lung tissue and letting air reach the healthier areas. Typically, between 5 and 15 coils are inserted into each treated part of the lung. The coils are meant to stay in the lung permanently.

Benefits and risks

NICE based its recommendations on the fact that only a small amount of research has been done on the insertion of these coils. The 7 studies that NICE looked at involved a

total of 208 patients.

Generally, the insertion of endobronchial nitinol coils seemed to improve people's quality of life slightly more than usual care. There was also some improvement in breathlessness and in the ability to exercise.

The studies showed that, within 6 months of the coils being inserted, risks included:

- chest pain in up to 14% of procedures
- pneumonia in up to 11% of procedures
- serious worsening of chronic obstructive pulmonary disease in 17% of procedures
- pneumothorax (air between the lung and chest wall) in 5% of procedures
- infection of the lower airways in up to 5% of procedures.

NICE was also told about some other possible risks; bleeding and infection.

If you want to know more about the studies see the guidance. Ask your health professional to explain anything you don't understand.

Questions to ask your health professional

- What does the procedure involve?
- What will the research record and how long will I be in the study
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make me feel worse?
- What are the risks of the procedure?
- Are the risks minor or serious? How likely are they to happen?
- What care will I need after the procedure?
- What happens if something goes wrong?

Medical terms explained

Bronchoscopy
Looking at and treating the inside of the lungs using an instrument called a bronchoscope, which is usually inserted through the mouth or nose.

About this information

NICE interventional procedures guidance advises the NHS on the safety of a procedure and how well it works.

ISBN: 978-1-4731-8173-1

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