

Mycobacterium chimaera infections associated with cardiopulmonary bypass

Guidance for General Practice

Background

In July 2016 all General Practitioners (GP's) were informed about 'Mycobacterium chimaera infections in patients following cardiac surgery' (See Appendix A).

Ongoing investigations during 2016, in the UK and internationally, have substantiated the risk of transmission, identified further cases, and highlighted difficulties and delays in diagnosing and treating this very uncommon infection.

An NHS England, PHE, MHRA and Society for Cardiothoracic Surgery working group have made a number of recommendations including a retrospective patient notification exercise to be undertaken by providers as a consequence of the recognised delay in diagnosing *M. chimaera*. Discussion across the UK devolved administrations led to a recommendation that this is a 4 Nations response.

The following information will provide you with advice for assessing patients who have had cardiothoracic surgery or ECMO and how they should be managed.

Mycobacterium chimaera: Assessing patients who have had cardiothoracic surgery or ECMO

It is now recognised that patients who have been on cardiopulmonary bypass for surgery or ECMO may have been exposed to the organism *Mycobacterium chimaera*, a non-tuberculous environmental mycobacterium which has been found to contaminate heater cooler units used for bypass. This organism has caused endocarditis, vascular graft infections, disseminated infections, or chronic sternal wound infections in patients in the UK and internationally. Although rare, it has led to some deaths. The presentation can be very non-specific. The incubation period of these infections has been up to 5 years in the UK, but the upper limit is unknown.

A notification letter has been issued to the patients at maximum risk (those who had prosthetic valve repair or replacement), and patients undergoing cardiothoracic surgery on bypass are informed as part of the consent procedure. Some other patient groups may be informed as part of their routine follow up, such as heart/lung transplant patients and some congenital heart disease patients.

Please use the following two screening questions if you think this infection may be a possibility:

- 1. Has the patient undergone cardiothoracic surgery on cardiopulmonary bypass or been placed on extracorporeal membrane oxygenation (ECMO) at any time?**

Examples of surgery conducted on bypass or in which bypass may have been used are heart valve repair/replacement, aortic graft procedures, coronary artery bypass graft, heart/lung transplant and some congenital heart disease repairs. The interval between surgery and symptoms can be several years (up to 5 years so far in the UK, but the upper limit is unknown)

2. Does the patient have any of:

- symptoms of a chronic systemic illness e.g. fever, malaise, weight loss, joint pain, cough or shortness of breath, without a known or clinically apparent explanation;
- symptoms and/or signs of endocarditis;
- a persistently non-healing or infected surgical wound following cardiothoracic surgery?
- another symptom or sign for which no cause has been found despite usual investigation?

If the answer is **yes** to both questions, the patient should be discussed with the local cardiology or infectious diseases services urgently, as they may require further clinical assessment and investigation for *Mycobacterium chimaera* and other causes of endocarditis or systemic infection.

Patients who may have been exposed but are currently well.

Media reports and/or notification letters may mean that some patients present who have been exposed to heater cooler units but are not unwell. If the answer is **yes** to question 1, but the patient is **currently well**, reassure the patient and note in their record that they have been exposed to heater cooler units. Advise them to return if they develop symptoms. You may also wish to provide them with patient information available at <http://www.nhs.uk/conditions/mycobacterium-chimaera-infection/Pages/Introduction.aspx>.