

***Mycobacterium chimaera* in heater cooler units and risk of infection following cardiac surgery: Update September 2017.**

What is the issue?

Heater cooler units are used during open heart operations to warm or cool a patient as part of their care. It has recently been recognised that there is the potential for a bacterium called *Mycobacterium chimaera* (*M. chimaera*) to grow in the water tank of heater cooler units. It is important to note that the water in the heater-cooler unit never comes into contact with the patient's blood or body fluids. When the water evaporates, the bacterium may become aerosolised and disperse into the environment including the operating theatre. The bacterium may infect a patient during certain types of open heart surgery; however the risk of infection is very low.

Am I at risk?

If you did not have heart valve or aortic vascular graft surgery, you are not considered to be at significant risk of infection.

You or your child may be at risk if:

- a) you or your child had open heart surgery in a Queensland hospital between the dates of October 2011 – August 2016 on a heart valve or if artificial vascular material was inserted into blood vessels leading to or from the heart. Overall, the risk following such operations is approximately 1 in 5000.

AND

- b) you or your child have or develop any of the symptoms listed below. Please note it can take up to five years to experience symptoms.
- c) There have been some isolated cases overseas of *Mycobacterium chimaera* infection associated with other types of cardiac surgery but the risk is extremely low. The risk of *Mycobacterium chimaera* infection following coronary artery bypass graft surgery is estimated to be less than 1 in 100,000.

What are the symptoms of *Mycobacterium chimaera* infections?

If you have had any of the following symptoms for more than two weeks since your open cardiac surgery, then *Mycobacterium chimaera* infection should be considered:

- Unexplained fevers
- Unexplained weight loss
- Increasing shortness of breath
- Waking up with the bed-sheets covered in sweat (night sweats)
- Joint or muscle pains
- Nausea, vomiting or abdominal pains

- Abnormal levels of tiredness/fatigue
- Pain, redness, heat or pus around the surgical site
- Failure to gain weight (young children only)
- New visual disturbance not corrected by glasses
- Post-operative sternal wound infection where common bacteria have been excluded as a cause

What do I need to do next if I am at risk?

If you have one or more of these signs and symptoms it is recommended that you make an appointment with your general practitioner for review and referral to your cardiologist or other appropriate specialist (cardiac surgeon or infectious diseases physician). Alternatively, contact 13 HEALTH on the phone number 13 432 584. As signs and symptoms are not limited to those listed, speak to your doctor if you are concerned. Continue to look for signs of unexplained infection as symptoms can take up to five years to present, although average time to develop symptoms is 18 months. If this involves your child please contact your cardiac care co-ordinator.

If you are unclear if your recent surgery was heart valve surgery or involved artificial vascular material in the chest, contact your General Practitioner (GP).

What will happen to me?

Your doctor will conduct an initial assessment including blood tests. If you are referred to a specialist other tests may be done including specialised tests for the detection of *Mycobacterium chimaera*. There is no benefit in doing these additional specialised tests if you do NOT have one or more of the symptoms outlined above.

If you are diagnosed with *Mycobacterium chimaera* infection, treatment consists of 3 to 5 different antibiotics taken daily over 1 to 2 years. As these antibiotics can have significant side effects and interactions, they are only prescribed in patients with confirmed positive results. In some cases further cardiac surgery may be required.

What is *Mycobacterium chimaera*?

Mycobacterium chimaera is one of a group of bacteria called Non-Tuberculous Mycobacteria (NTM) which is commonly found in the environment, including water. Like some of the other NTMs, *Mycobacterium chimaera* can be associated with lung infections but this is rare in Queensland. This new issue of post cardiac surgery infection is due to a number of factors including: previously unrecognised contamination of heater cooler units at the factory in Germany; the bacterium's resistance to previous cleaning procedures of the heater cooler unit; and the design of the unit itself.

Heater Cooler Unit Testing

All Queensland hospitals continue to undertake tests of every heater cooler unit currently in use to determine if it has the bacterium. Contaminated heater cooler units found to date have been removed from service or have received specialised disinfection. All heater cooler units undergo regular testing.

If a heater cooler unit is found not to have the *Mycobacterium chimaera* bacterium, there is no known risk for infection for patients.

If a heater cooler unit is found to have the *Mycobacterium chimaera* bacterium there is a low risk for infection for patients who have had an operation that involves heart valve surgery or artificial vascular material inserted into blood vessels leading to or from the heart.

What procedures are not considered to be at risk

Patients who have had cardiopulmonary bypass for coronary bypass grafting, transplantation or other open cardiac procedure not involving artificial material, appear to be at extremely low risk of any infection.

Patients who have had other procedures where cardiopulmonary bypass is not usually required are not at risk. Such procedures include:

- Stents
- Pacemakers
- Implantable defibrillators
- Ablations

What should I do to find out whether I am at risk?

By the end of February 2017, Queensland Health sent information to every patient in a public hospital between the dates of October 2011- August 2016, who has had open heart surgery on a heart valve or where artificial vascular material was inserted into blood vessels leading to or from the heart. Letters to patients outline the potential risk of exposure to *Mycobacterium chimaera* based on hospital heater cooler unit tests. Patients who have had other open heart operations have not been sent letters as the risk of *Mycobacterium chimaera* infection is extremely low, with rare instances overseas where infections have been described. If you are concerned, see your General Practitioner (GP).

If I've been exposed to this bacterium, is there a risk to my family and friends?

No, the *Mycobacterium chimaera* bacterium is not contagious. This means it cannot be spread through contact from person to person.

How many patients have been identified so far as infected with the bacterium?

To date, there have been six (6) patients identified with *Mycobacterium chimaera* infection in Australia. One patient has been identified in Queensland as being infected with the bacterium. The patient has been notified and has commenced on antibacterial treatment. Four cases have been identified in NSW and one in Victoria.