

# *Mycobacterium chimaera* and Heater-Cooler Devices

## Information Update for NSW General Practitioners

H17/4800

(Please distribute to all GPs in the practice)

### KEY POINTS:

1. The first confirmed case of *M. chimaera* infection related to contaminated heater-cooler units has been reported in NSW.
2. Contamination of LivaNova (Sorin) heater-cooler devices with *Mycobacterium chimaera* has been associated with serious infections post open cardiac surgery in many countries.
3. Consider the possibility of *M. chimaera* infection in patients presenting 3 months to 5 years post cardiac surgery with symptoms of unexplained infection.

### Update:

A NSW patient who underwent heart valve surgery in 2015 at Prince of Wales Hospital and who was hospitalised with a serious febrile illness has now been confirmed as having an *M. chimaera* infection around the valve prosthesis. The patient has responded well to combination antimicrobials and has been discharged.

Nosocomial infection of cardiac surgery patients with *M. chimaera* associated with contaminated Sorin heater-cooler devices (HCD) was first recognised in 2012 in Switzerland [1]. Patients are thought to acquire infection via contaminated aerosols from the HCD depositing on exposed tissues during surgery.

Exposure of patients to implicated HCDs in the operating theatre may lead to serious infections up to 5 years post surgery. While the estimated incidence of *M. chimaera* infections after cardiac surgery is very low, less than 1 case per 10,000 operations, one report suggests that the risk may increase for other patients who were exposed at the same hospital linked to a confirmed *M. chimaera* case.

### How does *M. chimaera* infection present?

- Cases have presented 3 months to 5 years post operatively.
- The most common symptoms at presentation have been **fever, shortness of breath and weight loss**.
- Reported infections include surgical site infection, endocarditis, prosthetic valve infection, para-valvular abscess, graft infection and myocarditis [2,3]. While initial case reports described mostly fatal infections, early recognition of the cause appears to result in better patient outcomes.
- Some patients have also presented with symptoms of non-cardiac disease: osteoarthritis, cholestatic hepatitis, nephritis, splenomegaly, or ocular disease.
- Patients undergoing heart valve surgery, particularly with prosthetic implants, seem to be at highest risk.

### How can patients suspected to have *M. chimaera* infection be investigated?

- Testing patients for *M. chimaera* is complex and only available through a reference laboratory.
- If a patient is suspected to have an *M. chimaera* infection, seek specialist advice from an ID or respiratory physician, or clinical microbiologist. They can advise if testing is indicated and advise on patient management.
- **There is no indication for testing asymptomatic patients.**

### How is *M. chimaera* infection treated?

- Treatment of *M. chimaera* involves combination antimicrobial regime similar to anti-tuberculosis therapy.
- Following initiation of combination antimicrobial therapy, surgical reduction of the infectious burden may be undertaken, followed by ongoing long-term combination antimicrobial therapy.

### What has been done to reduce the risk?

- In the NSW public hospital system, potentially contaminated HCDs were in use at four hospitals: **Prince of Wales, St George, Children's Hospital Westmead and Sydney Children's Hospital**. All potentially contaminated HCDs in public hospitals have either been replaced or removed from service, and facilities have reviewed processes to minimise the risk in the future [4,5].
- In December 2016 NSW Health sent information to patients identified as having had procedures that involved the use of a potentially-contaminated HCD in the four public hospitals.
- **ACT and private hospitals** which used potentially contaminated HCDs have also notified their patients.

### Further Information

- Contact the Clinical Excellence Commission, HAI team – (02) 9269 5500 or email [cec-hai@health.nsw.gov.au](mailto:cec-hai@health.nsw.gov.au)
- NSW Health Safety Alert SN005/16 at: [www.health.nsw.gov.au/sabs/Documents/2016-sn-005.pdf](http://www.health.nsw.gov.au/sabs/Documents/2016-sn-005.pdf)
- NSW Health webpage: [www.health.nsw.gov.au/Infectious/alerts/Pages/M-chimaera-and-surgery-alert.aspx](http://www.health.nsw.gov.au/Infectious/alerts/Pages/M-chimaera-and-surgery-alert.aspx)
- Patient advice lines are available: 02 9845 3442 for children; 1800 875 526 for adults

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