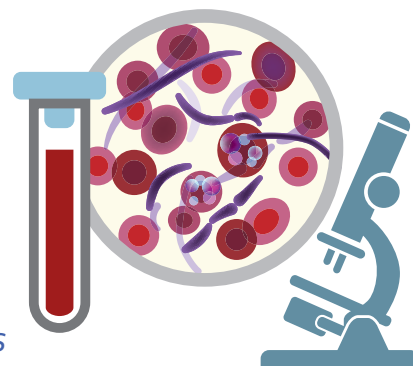


PATIENT EDUCATION | INFORMATION SERIES

Candidemia (Blood Infection) and Other Candida Infections

Candida is the single most important cause of fungal infections worldwide. In the U.S., Candida is the 4th most common cause of bloodstream infection that can develop while you are in a hospital (also called “nosocomial” infection or hospital acquired infection). There are 17 different species of Candida. Of these, *Candida albicans* (*C. albicans*), *C. glabrata*, *C. parapsilosis* and *C. tropicalis* are the most common species.



Where in my body can I get a Candida infection?

Candida infection can happen in almost any part of your body. Usually it develops on mucous membranes (in the mouth, genitals, etc.) but the infection can also be in your bloodstream. When Candida is in your bloodstream, the condition is called *Candidemia*.

Candida infection can spread from your bloodstream to other parts of your body (such as your eyes, kidney, liver, and brain). If this happens, it is called *Invasive Candidemia*.

Who is higher risk of getting Candida infections?

People who are healthy do not usually get Candidemia. Healthy people however, may get a Candida infection in their mouth (called *thrush*) from taking certain drugs such as inhaled corticosteroids used to treat asthma and COPD. You are at higher risk of developing Candidemia if you:

- are hospitalized, especially in the ICU for several days
- have a weakened immune system (for example, from being extremely ill, receiving chemotherapy, or having had a transplant)
- are diabetic
- receive corticosteroids

- have a central line in place
- have had abdominal surgery
- have severe burns
- have kidney disease needing dialysis
- are being treated with antibiotics for bacterial infection

Infants who are very underweight are also at risk for developing Candidemia.

Finally, persons who inject themselves with illicit drugs are also at risk for developing Candidemia.

How can I get Candidemia?

In the hospital, up to 10% of bloodstream infections are caused by the fungus Candida. Most often, Candidemia develops within 3 weeks of being admitted to an intensive care unit (ICU) especially if you have other risk factors. You can also get Candidemia outside of the hospital if you are sent home from the hospital with a central venous catheter or if you are on cancer chemotherapy. (For more information see the ATS Patient Information Series fact sheet on Central Venous Catheter.)

What are the signs and symptoms of Candidemia?

Signs and symptoms of Candida infection depend upon the site of infection. However, if you have

Candidemia, you may have one or more of the following:

- fever, chills
- skin rash
- generalized weakness or fatigue
- low blood pressure
- muscle aches
- vision changes or signs of an eye infection
- headaches and neurological deficits
- abdominal pain

How is Candidemia diagnosed?

Candidemia is diagnosed by taking a blood sample and finding *Candida* in your blood. In many cases, the species found is *Candida albicans*, however, other species of *Candida*, such as *Candida tropicalis*, *C. glabrata* and *C. parapsilosis* can be found in your blood. *Candida parapsilosis* is most commonly found in children. The diagnosis can also be made by detecting antigens of *Candida* in the blood stream.

How is Candidemia treated?

Because Candidemia can cause a serious, life threatening illness, treatment is usually begun when an infection is suspected. Treatment includes finding the source of the infection and if possible, removing it (for example the central venous catheter) and beginning treatment with medication. Although *Candida* infections of the mucosal surfaces (mouth and esophagus) are usually easy to treat, treatment of Candidemia can be challenging, especially when the infection has spread to other organs (eye, brain or kidneys) and if there is a central venous catheter in place.

There are a number of medications that can be used to treat *Candida* infections. The medications include: fluconazole, amphotericin B, a drug from the echinocandin group (such as anidulafungin, caspofungin or micafungin) or voriconazole. The type of antifungal drug used will depend on how sick you are or the species of *Candida* most likely causing your infection.

What can be done to prevent getting Candidemia?

Everyone should practice good hand washing, including members of the healthcare team, to

prevent all kinds of infections, from colds and flu, to *Candida*. Also, if a person has a central venous catheter, the healthcare team needs to be especially careful to practice good handwashing and check the catheter regularly for signs of infection. If you are at special or high risk for getting Candidemia, you may be treated with an antifungal medication to prevent you from getting the infection. This is called “prophylactic” treatment. Prophylactic treatment with an antifungal drug does not work for everyone and every medication has risks as well. The decision to treat you is based on the likely benefits of preventing an infection compared to the risk of making you sick from the medications themselves.

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Rx Action Steps

- ✓ Call your healthcare provider if you have risk factors for getting a fungal infection and develop a fever, or any other signs and symptoms of infection (for example, redness, warmth or drainage from the catheter site).

Healthcare Provider's Contact Number:

Resources

American Thoracic Society

- www.thoracic.org/patients/
 - Central venous catheter
 - Asthma
 - COPD

NORD—National Organization for Rare Disorders

- <https://rarediseases.org/rare-diseases/candidiasis/>

Centers for Disease Control (CDC)

- <https://www.cdc.gov/fungal/diseases/candidiasis/index.html>

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