Cryptococcal Meningitis

WHAT IS CRYPTOCOCCAL MENINGITIS?

Cryptococcus is a fungus that is very common in the soil. It can get into your body when you breathe in dust or dried bird droppings. It does not seem to spread from person to person.

Meningitis is the most common illness caused by Cryptococcus. Meningitis is an infection of the lining of the spinal cord and brain. It can cause coma and death. Cryptococcus can also infect the skin, lungs, or other parts of the body. The risk of cryptococcal infection is highest when your CD4 cell count is below 100 cells/mm^3. Cryptococcal meningitis is a major HIV-related opportunistic infection (OI), especially in the developing world.

The first signs of meningitis include fever, fatigue, a stiff neck, headache, nausea and vomiting, confusion, blurred vision, and sensitivity to bright light. The symptoms may come on slowly.

HIV infection or antiretroviral medications (ARVs) can cause some of these symptoms. Therefore, laboratory tests are used to confirm that you have meningitis. Also, people with HIV who start antiretroviral therapy (ART) and are infected with cryptococcus may develop these symptoms as part of immune reconstitution syndrome. A study in 2011 showed that starting ART while treating cryptococcal meningitis increased the risk of immune reconstitution syndrome. Better outcomes were obtained by treating the meningitis before starting ART.

Tests to diagnose cryptococcal meningitis use blood or spinal fluid. Healthcare providers get spinal fluid by doing a spinal tap. A needle is inserted into the middle of your back just above your hips and a sample of spinal fluid is withdrawn. The pressure of the spinal fluid can also be measured. If the pressure is too high, the healthcare provider may drain some of the fluid. The test is safe and usually not too painful. However, after a spinal tap some people get headaches that can last a few days.

The blood or cerebrospinal fluid (CSF) can be tested for cryptococcus in two ways. A CRAG test looks for an antigen (a protein) produced by cryptococcus. A culture is a way to see if the cryptococcus fungus can be grown from the sample of spinal fluid.

CRAG tests are quick and can produce same-day results. A culture can take a week or more to show a positive result. CSF can also be tested quickly using a stain.

PREVENTION AND SCREENING

Screening for cryptococcal antigen followed by pre-emptive antifungal therapy among cryptococcal antigen–positive people to prevent the development of invasive cryptococcal disease is recommended before initiating or reinitiating ART for adults and adolescents with HIV who have a CD4 cell count less than 200 cells/mm^3.

All people with HIV with a positive cryptococcal antigen result on screening should be carefully evaluated for signs and symptoms of meningitis and undergo a lumbar puncture if feasible with CSF examination and cryptococcal antigen assay (or India ink if cryptococcal antigen assay is not available) to exclude active cryptococcal disease.

HOW IS MENINGITIS TREATED?

Cryptococcal meningitis is treated with antifungal drugs. A short-course (one-week) induction regimen with amphotericin B deoxycholate (1.0 mg/kg/day) and flucytosine (100 mg/kg/ day, divided into four doses per day) followed by one week of fluconazole (1200 mg/day for adults) is the preferred option for treating cryptococcal meningitis among people with HIV.

A minimum package of pre-emptive hydration and electrolyte replacement and toxicity monitoring and management should be provided to minimize treatment toxicity during the induction phase with amphotericin B containing regimens and flucytosine.

THE BOTTOM LINE

Cryptococcal meningitis occurs most often in people with CD4 cell counts below 100 cells/mm^3. Although antifungal drugs can prevent cryptococcal meningitis, they are usually not used because of their high cost and the risk of developing drug-resistant yeast infections.

If you get meningitis, early diagnosis might allow treatment with less toxic drugs. Contact your healthcare provider if you have headaches, a stiff neck, vision problems, confusion, nausea, or vomiting.

If you develop meningitis, you will probably have to continue taking antifungal drugs to prevent the disease from coming back.

MORE INFORMATION

CDC: Cryptococcal Meningitis

HIV.gov: Cryptococcosis

POZ: Cryptococcal meningitis

healthline: Cryptococcal Meningitis

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