Microsporidiosi

Microsporidiosi is a mostly intestinal disease caused by a family of at least 15 micro-organisms called microsporidia. The organisms infect the lining of the small intestine, thereby causing severe diarrhea and an inability to absorb nutrients (malabsorption). Some microsporidia can cause disease in the sinuses, eyes, lungs, kidneys, brain, and other parts of the body.

The organisms can be found nearly everywhere, especially in untreated water sources. They are often found in feces of humans and animals, and can be spread through contaminated food, meats and seafood, and perhaps through oral-anal sex (“rimming”).

People with weakened immune systems—usually below 100 CD4 cells—may experience longer, more severe bouts of diarrhea that can be difficult to treat. Some people who have been exposed to microsporidia may never experience symptoms of the infection.

What are the symptoms, and how is it diagnosed?

Watery diarrhea is a main symptom of microsporidiosi, along with abdominal pain, weight loss, loss of appetite, dehydration, and passing gas (flatulence). If the disease spreads to other body parts, symptoms can include inflammation of the brain, eye infections, sinus infections, and muscle aches, among others.

The disease can be difficult to diagnose. Fluid (stool, blood, urine, etc.) and tissue (sputum, etc.) samples may be needed. Microsporidia are extremely small and some labs may miss the infection. Polymerase chain reaction (PCR) can be used to help diagnose it, which is similar to measuring HIV viral load.

How is it treated?

Unfortunately, these is no universally effective treatment for the disease. Many drugs have been studied in clinical trials. Some have been complete failures while others were effective for some but not for others.

The best way to control or prevent microsporidiosi appears to be starting or staying on potent HIV treatment. This can help increase CD4 counts above 100 when far fewer cases of the disease occur. Issues of malnutrition and dehydration are also of concern, so it’s important to treat them as well as the underlying infection.

There are three different approaches that can be taken when treating microsporidiosi:
Treat the infection. Some antibiotics are somewhat effective; however, none are approved by the FDA for treating microsporidiosis. These include fumagillin (Fumagillin B; not available in the U.S.) and albendazole (Albenza), which is not effective against certain species of microsporidia and neither should be used by pregnant women. In disseminated disease, itraconazole (Sporanox) may sometimes be combined with Albenza, although it should not be used during the first trimester of pregnancy. Treatment may be stopped once CD4 count stays above 200 for six months or more while on HIV treatment.

Help control the diarrhea. Anti-diarrheal drugs can be taken with antibiotic meds. These include: diphenoxylate (Lomotil), loperamide (Imodium) though not in first trimester, paregoric, tincture of opium (not in late pregnancy) and Pepto-Bismol. NSAIDs (non-steroidal anti-inflammatory drugs) such as ibuprofen (Advil, etc.) can help reduce inflammation. Thalidomide (Thalomid) also reduces diarrhea, although women who are or may become pregnant should avoid using it as it can cause severe birth defects.

Help correct the weight loss. There are two factors to consider: 1) eating healthy amounts of the right types of food, and 2) helping the body convert nutrients into lean body mass (muscle). Making diet changes may be necessary if you’ve lost weight. Consult your health provider or a registered dietitian to help you meet your nutritional needs. Using supplements may also help, such as Ensure, Sustacal, CitriSource, Jevity, and Replete, but they can be expensive. Some of these diet products are free of wheat, dairy (lactose), or other ingredients that can be difficult to digest. Unfortunately, very few clinical studies of oral supplements have shown benefit in people with HIV. To help boost your appetite, getting a prescription for Marinol (THC, the active ingredient in marijuana) or megestrol acetate (Megace) may help.

Very often, people with HIV lose muscle—as opposed to fat—as a result of an illness that causes weight loss. Losing even small amounts of muscle can be very serious, thus it is important to focus on increasing muscle mass when trying to regain weight. Anabolic therapies, used together with resistance exercise (weight lifting, etc.), can help boost muscle size. The only one approved by the FDA for treating HIV-related wasting is human growth hormone (Serostim). Serostim has been shown to increase muscle and help the body convert fat into energy. The drug is usually taken once a day by syringe. Other anabolic drugs that may help are: testosterone (injection, patch, cream/gel), oxandrolone (Oxandrin), nandrolone (Deca-Durabolin), and oxymethalone (Anadrol). Interestingly, anabolic steroids appear to be better at increasing muscle mass than increasing overall weight. Therefore, they might be best used with appetite stimulants and/or nutritional supplements to increase weight.

IRIS (immune reconstitution inflammatory syndrome) has not been reported with microsporidiosis—a condition that causes increased symptoms of an opportunistic infection to happen due to starting or switching HIV treatment.

How is it prevented?

The most effective ways to prevent microsporidiosis is to be on potent HIV treatment (keeping CD4 counts above 200) and to avoid its sources—mainly untreated water supplies and contaminated
foods or human feces. Wash your hands often and avoid drinking water or ice made from unfiltered tap water. Meats and fish should be washed thoroughly, fruits and vegetables should be washed and peeled, and use a barrier (dental dam, saran wrap, etc.) for oral-anal sex. These are particularly true for people with HIV with weakened immune systems.

Are there any experimental treatments?

If you would like to find out if you are eligible for any clinical trials involving new treatments for microsporidiosis, visit [ClinicalTrials.gov](https://clinicaltrials.gov), a site run by the U.S. National Institutes of Health. The site has information about all HIV-related clinical studies in the United States. For more info, you can call their toll-free number at 1-800-HIV-0440 (1-800-448-0440) or email contactus@aidsinfo.nih.gov.

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