Cryptosporidium

Cryptosporidium is a protozoan that can cause gastrointestinal disease and severe diarrhea. This organism is capable of completing its life cycle in a single host, resulting in cysts that are excreted in feces. The disease is contracted via ingestion of oocysts in food and water that excyst in the small intestine and cause damage to intestinal epithelial tissue. It is associated with large outbreaks of diarrhea when water supply sources are contaminated with the protozoan. In most people, cryptosporidium only causes an acute short-term infection but can cause severe diarrhea in the immunocompromised. It can be identified via acid-fast staining, and treatment includes oral rehydration therapy.



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Characteristics

Protozoa
Propeller-protozoa
Cryptosporidium is a protozoan, which are unicellular eukaryotic organisms.

Ingestion of Oocysts in Food or Water
O-sisters in Water
This organism is capable of completing its life cycle in a single host, resulting in cysts that are excreted in feces. The disease is contracted via ingestion of oocysts in food and water that excyst in the small intestine and cause damage to intestinal epithelial tissue.

Acid Fast Cysts
Acidic-lemon Running Fast
Cryptosporidium can be identified via acid-fast staining.

Signs and Symptoms

Outbreaks of Diarrhea from Contaminated Water Supply
Water Fountain
Cryptosporidium is associated with large outbreaks of diarrhea when water supplies are contaminated with the organism.

Mild Disease in Non-immunocompromised
Guy without Band-AIDS on Toilet Laughing
In most people, cryptosporidium only causes an acute short-term infection, but can cause severe diarrhea in the immunocompromised.

Severe Diarrhea in AIDS
Guy with Band-AIDS on Toilet
In most people, cryptosporidium only causes an acute short-term infection, but can cause severe diarrhea in the immunocompromised. It is the most common organism isolated in HIV positive patients presenting with diarrhea.

Treatment

Nitazoxanide for Immunocompetent
Night-socks with Moon
Nitazoxanide is used to treat Cryptosporidium parvum along with other protozoa and helminths in immunocompetent adults, and especially children. It works by inhibition of anaerobic energy metabolism in pathogenic microorganisms. Patients who are immunocompetent may not require nitazoxanide initially, and supportive care is indicated. Patients who are immunocompromised or patients with HIV should first be treated with antiretroviral therapies, with a goal to increase their CD4+ counts to above 200.

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