

Neglected Parasitic Infections: Toxocariasis

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

I'm Dana Woodhall, a Medical Officer at the Centers for Disease Control and Prevention. Neglected parasitic infections can affect anyone, regardless of race or economic status. Minorities, immigrants, and people living in poor or disadvantaged communities appear to be most at risk. Neglected parasitic infections include Chagas disease, cysticercosis, toxocariasis, toxoplasmosis, and trichomoniasis. Health care providers typically receive little training on these diseases, which means that many physicians may not understand them well.

Today, we'll discuss the clinical aspects of toxocariasis. Toxocariasis is a human disease caused by infection with the larval stages of the dog or cat roundworm. Humans become infected by ingesting either embryonated eggs in soil or food or encysted larvae in raw meat from cow, sheep, or chicken. It's important to note that when an egg is initially shed, it's not infectious. It takes one to two weeks for the larvae to develop and become infectious.

The highest prevalence is in the southern United States, and Non-Hispanic blacks are more likely to be infected than other groups. Risk factors for infection include poverty, low education levels, and dog ownership. Soil contamination is also common and areas of particular concern are sandboxes and places in yards where animals tend to defecate.

Most people are asymptomatic when infected with *Toxocara*. Symptomatic disease occurs when dead or dying larvae cause a reaction in the body. There are three clinical forms of the disease. One is called covert toxocariasis, or common toxocariasis. Symptoms are mild and nonspecific. Covert toxocariasis is often undiagnosed because the patient is not sick enough to seek medical attention.

The two more severe forms of the disease are visceral toxocariasis and ocular toxocariasis. Visceral toxocariasis typically occurs in children, but can infect persons of any age. Signs and symptoms can include fever, wheezing, hepatomegaly, abdominal pain, anorexia, or skin reaction. Rarely, the migrating larvae can cause eosinophilic meningitis or encephalitis, myelitis, optic neuritis, radiculitis, cranial nerve palsy, or myocarditis. In lab findings, there is almost always a marked peripheral eosinophilia and often, anemia and a hypergammaglobulinemia.

Ocular toxocariasis typically occurs in 5 to 10-year-olds. Usually, only one eye is affected and manifestations can include strabismus, decreased vision, and leukocoria. Eye exam may show a subretinal granulomatous mass or posterior pole granuloma.

Diagnosis of toxocariasis is made using an Enzyme-Linked Immuno-Sorbent Assay, or ELISA test. Treatment of toxocariasis varies, depending on the type of infection. Covert toxocariasis often does not need to be treated. In visceral toxocariasis, treatment is usually required and includes five days of albendazole. Systemic corticosteroids may be added for allergic symptoms, such as skin rash, pruritus, or asthma-like symptoms. Treatment of ocular toxocariasis is directed toward suppressing the inflammatory response using a two- to four-week course of systemic or

intraocular corticosteroids. The use of albendazole in managing ocular toxocariasis remains unclear. Surgery may be needed in order to remove the larvae.

Prevention of toxocariasis is important in both animals and humans. Interventions targeting dogs and cats include regular deworming during annual veterinary visits. People are encouraged to clean up after their pets, to properly dispose of waste, and to clean pet play areas weekly.

It takes more than a week for eggs to embryonate and become infectious. Human infection can be prevented by encouraging children not to play where animals defecate, cleaning pet areas regularly, covering sandboxes when not in use to prevent pet access, preventing geophagia, and using good hygiene practices, such as washing hands with soap and water after playing outside or with pets.

For more information on parasites, including toxocariasis, please visit www.cdc.gov/parasites and the COCA Website at emergency.cdc.gov/coca. Thank you.

[Announcer] For the most accurate health information, visit www.cdc.gov or call 1-800-CDC-INFO.