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Chagas disease (American trypanosomiasis) is a parasitic disease often thought to affect people living in foreign countries. As immigration and travel increase, U.S. pediatricians likely will see children at risk for or infected with Chagas disease.

The disease is caused by the protozoan *Trypanosoma cruzi* and is spread by triatomines (kissing bugs). These blood-sucking bugs feed on humans and defecate immediately after taking a blood meal; infection occurs when a bitten person inadvertently rubs the triatomine's feces, which contain the parasites, into the bite site or mucous membranes. The disease also can be transmitted via blood transfusion, organ transplantation, lab accidents, contaminated food or congenitally.

Chagas disease is endemic in parts of Mexico and Central and South America, where an estimated 8 million to 11 million people are infected. Infected triatomines also have been found in the southern United States. The Centers for Disease Control and Prevention (CDC) estimates that more than 300,000 people in the United States are infected with Chagas disease, most having acquired their infections while in endemic countries.

U.S. children are at highest risk for Chagas disease if they were born in a Chagas-endemic region and immigrated to or were adopted into the United States, or if their mother has the disease. The rate of congenital transmission of Chagas disease is estimated to be between 1% and 10% of all babies born to infected mothers.

Individuals can become infected with Chagas disease at any point in their lives. If left untreated, infection is lifelong.

Acute, chronic phases of disease

The acute phase of disease lasts a few weeks or months when parasites can be found circulating in the blood. Manifestations of acute infection can be mild or subclinical; fever or swelling around the site of inoculation also can occur. For example, unilateral firm edema of the eyelids, known as Romaña's sign, can occur when the portal of entry is the conjunctiva.

RESOURCES

- Questions about the diagnosis and treatment of Chagas disease can be addressed to the Parasitic Diseases Public Inquiries Line at 404-718-4745, parasites@cdc.gov or www.cdc.gov/parasites/chagas.
- For a list of Chagas-endemic countries, visit www.cdc. gov/parasites/chagas/adopt.html.

The chronic phase occurs when the parasite is found in the tissues and not the blood. Although most patients with chronic Chagas disease remain asymptomatic, 20% to 30% of infected people develop debilitating and sometimes life-threatening medical problems. Complications include cardiac disease (such as conduction abnormalities or apical aneurysm) or gastrointestinal manifestations (e.g., megacolon or megaesophagus). Having *T. cruzi* infection also increases the risk of stroke in adulthood.

There are no screening guidelines for pregnant women. Diagnosis of congenital infection is made by identifying the parasite through direct microscopy of fresh anticoagulated cord blood and/or peripheral blood; the sensitivity of microscopy decreases with the transition from the acute to chronic phase.

Infants born to seropositive mothers should be screened using conventional serologic testing after 9 months of age, when maternal antibody levels have waned. Most infected newborns are asymptomatic or have nonspecific findings such as low birthweight, prematurity or low Apgar scores; some develop hepatosplenomegaly, anemia or thrombocytopenia. Although rare, infants also can develop myocarditis or meningoencephalitis, which are associated with a high risk of mortality.

Older children in the chronic phase of Chagas disease typically are asymptomatic. Diagnosis of chronic infection is made by serologic testing after consideration of the patient's history and clinical findings. Confirmatory testing for Chagas disease is available through the CDC.

Treatment

Antiparasitic treatment for Chagas disease is indicated for all acutely infected patients and for chronically infected children up to 18 years of age. Congenital infections are considered acute disease. Treatment also is strongly recommended for chronically infected adults up to 50 years old, including women of childbearing age.

Nifurtimox and benznidazole have proven efficacy against *T. cruzi.* These drugs, however, have not been approved by the Food and Drug Administration for use in the United States and are available only from the CDC under investigational protocols. The drugs are well-tolerated in infancy; treatment for infected infants should begin as soon as a diagnosis is made. More than 90% of congenitally infected infants are cured of infection when treated in the first year of life.


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Ms. Burke

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