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What is Chagas Disease?

Chagas disease is named after the Brazilian physician Carlos Chagas, who discovered the disease in 1909. It is caused by the parasite *Trypanosoma cruzi*, which is transmitted to animals and people by “kissing bugs” and is found only in the Americas (mainly, in poor, rural areas of Latin America where kissing bugs can easily invade and live in homes). Chagas disease (*T. cruzi* infection) is also referred to as American trypanosomiasis.

Who gets Chagas Disease?

Vector-borne transmission of Chagas occurs principally in rural areas of Mexico, Central America, and South America where air conditioning and screened windows are a rarity and home construction methods leave many gaps that allow the bugs to enter the home. In some regions of Latin America, vector-control programs have succeeded in stopping the spread of this disease by spraying insecticides on walls and in cracks and crevices of home walls. Vector-borne transmission does not occur in the Caribbean, but rare locally acquired vector-borne cases of Chagas disease have been noted in the southern United States.

How is Chagas Disease spread?

An infected Triatomine bug, also known as kissing bugs, takes a blood meal on a sleeping person and defecates on the sleeping host, releasing the parasite (called trypomastigotes) in its feces near the site of the bite wound. Trypomastigotes contaminate the sleeping human host when they scratch their itchy bite wound as they sleep, and rub the pathogen into the wound, or into their mouth, nose or eyes. Chagas disease may also be transmitted in rare cases orally through consumption of contaminated food, during pregnancy or birth, through blood transfusions, and organ transplants.

What are the symptoms of Chagas Disease?

Infection may be mild or asymptomatic. There may be fever or swelling around the site of inoculation (where the parasite entered into the skin or mucous membrane). Rarely, acute infection may result in severe inflammation of the heart muscle or the brain and lining around the brain. Complications of chronic Chagas disease may include:

- Heart rhythm abnormalities that can cause sudden death;
- A dilated heart that doesn't pump blood well;
- A dilated esophagus or colon, leading to difficulties with eating or going to the bathroom.

How soon after exposure do symptoms appear?

Chagas disease is divided into two phases, including acute chagas and chronic chagas. Acute Chagas disease symptoms may become evident within the first few weeks or months after initial infection. and symptoms may last approximately eight weeks. During this period, parasites may be found in the

circulating blood. Many infected persons may remain asymptomatic for life and never develop Chagas-related symptoms.

Chronic chagas occurs when patients are left untreated, which results in a lifelong infection with the parasite and most persons will not have symptoms. In the chronic phase of disease, the parasite can cause problems inside the heart muscle, leading to heart failure, or in the intestines resulting in multiple complications. There is a 30% of developing complications if Chagas disease is left untreated.

How is Chagas disease diagnosed?

The diagnosis of Chagas disease can be made by observation of the parasite in a blood smear by microscopic examination during the first few months of infection. Thick and thin blood smears are made and stained for visualization of the parasites. However, a blood smear observation only works well in the acute phase (first months) of infection, when parasites are circulating in blood. Chagas disease antibodies can be detected in blood starting about a month or more after the initial infection. Chagas disease diagnosis is based on the patient's symptoms, as well as their likelihood of being infected, such as having lived in primitive housing in an endemic country. Laboratory diagnosis in chronic cases is generally made by blood testing with at least two different serologic (antibody) tests.

What is the treatment for Chagas?

Treatment for Chagas disease is recommended for people diagnosed early in the course of infection (acute phase), in babies with a congenital infection, or in those with suppressed immune systems. Some patients with chronic infection may also benefit from treatment, but curing the infection is generally not possible in persons with chronic infections. Patients with a chronic infection may benefit from consultation with doctors such as cardiologists, gastroenterologists, or infectious disease specialists.

Do people who have been in contact with someone with chagas need to be tested and treated?

Contacts of individuals with Chagas should not be tested.

How can Chagas Disease be prevented?

In endemic areas of Mexico, Central America, and South America, improved housing and spraying insecticide in and on home walls to eliminate triatomine bugs has significantly decreased the spread of Chagas disease. Further, screening of blood donations for Chagas disease is another important public health tool in helping to prevent transfusion-acquired disease. Early detection and treatment of new cases, including mother-to-baby (congenital) cases, will also help reduce the burden of disease.

How can I get more information about Chagas?

- If you have concerns about Chagas Disease, contact your healthcare provider.
- Call your local health department. You can find your local health department at vdh.virginia.gov/health-department-locator/.
- Visit the CDC's page on Chagas, cdc.gov/parasites/chagas/.

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