

CHAGA'S DISEASE

(American Trypanosomiasis)

Unspoken Threat in the Americas

Last Updated: June 2006

Chaga's disease is a parasitic infection transmitted to humans by reduvid bug defecation into broken skin or conjunctival or mucous membranes while taking a blood meal, typically at night. The parasite, *Trypanosoma cruzi*, exists in the far south of the United States, Central America, throughout South America down to central Argentina and Chile. It is the 3rd most important worldwide tropical disease, after malaria and schistosomiasis.

Transmission also occurs by infected transfused blood units, usually in cities with symptom-free, infected immigrant blood donors.

Epidemiology

1) Infected insects found in:

- burrows
- hollow trees
- palm trees
- niches in primitive wood, mud/adobe, and stone houses (i.e. substandard rural dwellings), especially with thatched roofs



2) Central/South America:

- Approximately 18 million infected: highest concentration of cases = southern Mexico to Northern Argentina and Chile (Amazon basin and Caribbean are exceptions)
- 45,000 deaths/year
- Blood supply high-risk: in Bolivia, 1960-89, 53% blood donors seropositive for *T. cruzi*

3) United States:

- In recent decades, with increasing immigrants, chronic *T. cruzi* infection has grown considerably; many are from Central America where prevalence of Chaga's is high.
- Estimate: 80,000 – 100,000 infected in U.S.
- Raises concern over risk of blood supply and organ transplants

Note: There have been locally acquired cases in Texas and California

Disease States

1) Acute Disease* (fatality rate = 10%): In 7-10 days,

- swollen, firm skin lesion (chagoma) at point of parasite entry with swollen, local lymph nodes; or painless, swollen eyelids on one side of face
- fever, poor appetite, malaise
- edema of face and legs

- generalized swollen glands and enlarged liver/spleen
- * Most cases are initially asymptomatic or only mildly ill.

- 2) Indeterminate Phase: majority of cases go to this after the acute phase – no symptoms, low-grade parasite levels in blood, positive *T. cruzi* antibodies.
- 3) Chronic Disease (years – decades after initial infection):
 - Inflamed, enlarged (right) heart: heart failure, arrhythmias, thromboemboli
 - Enlarged esophagus: difficult, painful swallowing; regurgitation; chest pain
 - Megacolon: enlarged colon with chronic constipation and abdominal pain
 - 10-30% of those with chronic *T. cruzi* infection are symptomatically ill.

Treatment

Nifurtimox and benznidazole are drugs with parasite cure rate of 70%; duration of treatment is 60-120 days. These drugs have significant intolerances/toxicity.

Prevention

- 1) No vaccine or chemoprophylaxis (preventive meds) available
- 2) Travelers:
 - a) Avoid sleeping in dilapidated dwellings, particularly with cracks, crevices in walls.
 - Search sleeping areas thoroughly for reduvid bugs.
 - Avoid overnight stays in endemic areas.
 - Consider sleeping outdoors.
 - b) Insect repellent
 - c) Bed nets indoors and outdoors
 - d) Absolutely receive no blood transfusions in Chaga's endemic areas, unless a life-threatening emergency exists.

Edward R. Rensimer, MD, FACP
Director

