Announcements

Register for the Epi-Tech Trainings:
1. Log-on or Request log-on ID/password: https://tiny.army.mil/r/zB8A/CME
2. Register for Epi-Tech Surveillance Training: https://tiny.army.mil/r/7laAB/EpiTechFY16

Please enter your name/service and e-mail into the chat box to the left or email the disease epidemiology program at: usarmy.apg.medcom-phc.mbx.disease-epidemiologyprogram13@mail.mil
- You will receive a confirmation email within the next 48 hours with your attendance record

Please mute your phones and DO NOT place us on hold. Press *6 to mute/unmute your phone.
Chagas Disease (American Trypanosomiasis)

USAF School of Aerospace Medicine / Epidemiology Consult Services
Presented by: Dr. Will Reeves
DSN: 798-3071 (Comm: 937 938-3071)
26 January 2016

Photo: CDC
Basics of Chagas Disease

Causative agent: *Trypanosoma cruzi*
Kinetoplastida: Trypanosomatidae
Parasitic Protozoa

Photo credit: CDC

Photo credit: CDC
Acute vs Chronic Disease

Acute: Few weeks to months. Often asymptomatic or mild. Swelling near infection site. <5% mortality mostly in children.

Chronic: Long term cardiac or intestinal complications. Fatal 30%

Photo credit: CDC
Humans and Mammals are susceptible hosts.

Over 8 Million people in Central and South America have Chagas Disease.

An estimated 300,000 individuals infected in the USA. 30000-45000 cardiomyopathy cases (CDC Data)

CDC reports 6 cases of locally acquired Chagas disease CONUS.
Relevance

CDC estimate ~66–638 annual congenital cases CONUS and ~20-200 in Europe.


Military Relevance: US forces deploy or are stationed within the range of the vectors.

Military working dogs can be infected
Vectors and Transmission

Primary Transmission:

Vector-borne by “kissing bugs” (Triatominae). Transmitted in the feces of the bugs.

Secondary Transmission:

Blood Transfusion/Organ Transplant

Eating infected bugs
Kissing Bug Behavior

Habitats: In areas with animal nests, cracks in walls

Attracted to lights in TX, NM, AZ

Avoid these habitats.
Chagas Disease and the Vectors are essentially restricted to the New World. (Largely excluding Caribbean).
(Note: *Linshcosteus* and *Triatoma rubrofasciata*)
Preventive Actions

Avoiding bugs is critical
What About Repellents and Permethrin?

No data to really give support to the use of repellents.
Control Actions

Exclude Vectors

Avoid Light Attraction

Screen Blood

Keep Insects Away from Food
Diagnostics

Indirect fluorescent antibody and ELISA are available from cDC.

Cross-reactive with similar parasites (*Leishmania* and *T. rangeli*)

PCR

[CDC recommends confirmatory testing especially if suspicious.]
5.60 TRYPANOSOMIASIS

Clinical Description

An arthropod-borne protozoal disease

2. American Trypanosomiasis (Chagas’ disease): The main clinical signs are fever, malaise, hepatosplenomegaly and lymphadenopathy in the acute phase. Many patients present without clinical signs. An inflammatory response at the site of infection (chagoma) may last up to 8 weeks. Chronic infection can lead to myocarditis and meningoencephalitis.

Laboratory Criteria for Diagnosis

2. American Trypanosomiasis: (any of the following)
   - Positive parasitology (direct, xenodiagnosis, blood culture), or
   - Positive serology for Trypanosoma cruzi antibodies (IgM) by indirect haemagglutination test (IHA), indirect immunofluorescent antibody test (IFAT), direct agglutination test (DA), or ELISA.

Case Classification

2. American Trypanosomiasis:
   - Probable: (Endemic areas) a case with unexplained fever, hepatosplenomegaly and a chagoma (inflammation at site of infection).
   - Confirmed: A clinically compatible case that is laboratory-confirmed.
   - Congenital: A newborn with positive parasitology (direct, xenodiagnosis, culture).

Required Comments

Specify the form of trypanosomiasis, indicate whether case is suspected, probable, confirmed or congenital and document relevant travel/deployment history to endemic areas (Note: the incubation period of African trypanosomiasis is usually 3 days to a few weeks and longer for T.b. rhodesiense; American trypanosomias 5-14 days).

Additional Considerations

None.
From the CDC:

Two drugs used to treat infection with *Trypanosoma cruzi* are nifurtimox and benznidazole.

In the United States, these drugs are not FDA approved and are available only from CDC under investigational protocols.

Contraindications for treatment include severe hepatic and/or renal disease.
QUESTIONS?
Contact Information

- **Army**: APHC – Disease Epidemiology Program
  Aberdeen Proving Ground – MD
  Comm: (410) 436-7605  DSN: 584-7605
  usarmy.apg.medcom-phc.mbx.disease-epidemiologyprogram13@mail.mil

- **Navy**: Contact your cognizant NEPMU
  NEPMU2: COMM: (757) 950-6600; DSN: (312) 377-6600
  Email: usn.hampton-roads.navhospporsva.list.nepmu2norfolk-threatassess@mail.mil
  NEPMU5: COMM: (619) 556-7070; DSN (312) 526-7070
  Email: usn.san-diego.navenpvntmedusfive.list.nepmu5-health-surveillance@mail.mil
  NEPMU6: COMM: (808) 471-0237; DSN: (315) 471-0237
  Email: usn.jbphh.navenpvntmedusixhi.list.nepmu6@mail.mil
  Email: NEPMU7@eu.navy.mil

- **Air Force**: Contact your MAJCOM PH or USAFSAM/PHR
  USAFSAM / PHR / Epidemiology Consult Service
  Wright-Patterson AFB, Ohio
  Comm: (937) 938-3207  DSN: 798-3207
  episervices@us.af.mil