Refugee Health Network of Queensland – Primary Care Clinical Advisory Group

(RHNQ-CAG)

RHNQ Guidelines for Screening for Chagas Disease (Trypanosoma cruzi)

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1. Introduction

1.1 Purpose This clinical guideline is to enable patients from a refugee background to receive appropriate screening and treatment for Chagas disease within a primary care setting where appropriate.

2. Clinical Guideline

2.1 Background

Chagas disease is a parasitic disease caused by the protozoan parasite Trypanosoma cruzi. Chagas disease is endemic in Mexico, Central and South America especially in rural areas.[1] Endemic countries include Argentina, Belize, Bolivia, Brazil, Chile, Columbia, Costa Rica, Ecuador, El Salvador, French Guiana, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela. [1,2]

The parasite is spread by triatome bugs (kissing bugs) which often live in housing with earthern walls and floors in rural areas and overcrowded poorer regional areas[3]

The bugs emerge at night to feed and become infected after biting and ingesting blood from infected human blood. They then pass the parasite in their faeces which can infect bite sites, mucous membranes and broken skin.[1]

Transmission can also occur from mother to fetus during pregnancy and through blood and organ transplantation. The main source of transmission in non-endemic regions (including Australia) is trans-placental during pregnancy.[2]

2.2 Symptoms and Natural History of the Disease

Chagas disease has two phases:

1. Initial acute phase– usually asymptomatic or mild flu-like systemic symptoms. There may be characteristic lesions at the inoculation sites such as skin swelling (Chagoma) or unilateral eyelid swelling (Romana's sign).

   Congenital infection is largely sub-clinical but can manifest as prematurity, low birthweight, hypotonicity, fever, hepatosplenomegaly or anaemia. Rare presentations can include meningoencephalitis, pneumonitis and neonatal death.

   Diagnosis at the acute stage is via direct microscopy of parasites and PCR of blood and tissue samples and delayed serology if initial tests negative.

   Treatment at this acute stage is curative.[3]

2. Chronic phase is divided into latent and symptomatic stages

   - Asymptomatic latent period for decades is referred to as the "indeterminate form". During this stage patients will have positive serology, but no end-organ manifestations and a normal ECG.

   - After 10-30 years, 20-40% of infected individuals will develop the symptomatic chronic "determinate form". Cardiac involvement is the most common complication of chronic infection. Parasite invasion of cardiac tissue leads to a fibrosing myocarditis which can progress to an arrhythmogenic dilated cardiomyopathy with heart failure, conduction disturbances, ventricular arrhythmias, Sudden Cardiac Death and thromboembolic events.

     Parasite invasion and inflammation of GIT smooth muscle can lead to progressive dysmotility and megaesophagus and megacolon. Patients may present with dysphagia, GORD and constipation. [1,2,3,4]

2.3 Screening Recommendations

Important points:

- Screening should include serological evidence of exposure and assessment for organ involvement and staging.
- Positive serology does not always warrant treatment but can enable targeted monitoring and follow up.

Chagas disease should be suspected in the following risk groups and serological screening be considered in:

- People born in or having lived in endemic areas (with or without symptoms suggestive of organ involvement)
- People who received blood or organ donation in endemic countries
- Children born to mothers from endemic regions
- People with a positive family history
- Pregnant women with above risk factors
- People about to undergo immunosuppression with the above risk factors[2,5]

Testing is a priority for pregnant women and women of child-bearing age and those with or at risk of immunosuppression.

The pathology request form must specify *Trypanosoma Cruzi (Chagas) serology* and include clinical and travel history and can be ordered through all major pathology providers.

The sample will be referred to the reference laboratory at Westmead Hospital, NSW for T Cruzi IgG antibody testing by using 2 different methods. Confirmatory testing is sent to a reference lab in Canada so results may not be available for several weeks.

Note: False positives may occur in Leishmaniasis and Syphilis[1, 5]

2.4 Staging Recommendations

Patients with positive serology on screening require a clinical assessment for symptoms and signs of chronic Chagas disease and appropriate investigations and referrals.

ALL patients who test positive should receive an ECG. The earliest evidence of cardiac involvement in asymptomatic patients is the development of ECG conduction abnormalities. Early ECG abnormalities include RBBB, left anterior fascicular block, ST changes, premature ventricular beats and bradycardia.

If the ECG is *abnormal* then further referral is warranted for echocardiography and 24 h Holter monitor and cardiology specialist assessment.

If the ECG is *normal*, it should be repeated at least yearly to assess for ECG changes.

The presence of gastrointestinal symptoms warrants barium contrast studies and gastroenterology specialist assessment. [4,7]

2.5 Treatment Recommendations:

Treatment is always recommended in acute and congenital infections and in disease reactivation with immunosuppression.

In the chronic latent phase, the aim of treatment is to stop progression to symptomatic disease and its complications and to prevent congenital infection and reactivation.

Treatment is more effective if given before cardiac involvement is evident and does not show any benefit for people with advanced cardiomyopathy.

Referral to an Infectious Diseases Specialist is recommended for decision making regarding treatment.

Treatment is recommended in the chronic phase for the following groups:

- All patients < 18 years of age
- Women of child-bearing age (contraindicated in pregnancy)
- Adults aged 19-50 with latent form or with only mild-moderate cardiomyopathy
- Planned immunosuppression
- Treatment can be considered in adults over 50 and those with GI disease provided there is not advanced cardiomyopathy

There are 2 drugs with proven efficacy for treatment of Trypanosoma cruzi available in Australia via the TGA Special Access Scheme: benznidazole (1st line) and nifurtimox. Both drugs have significant side effect profiles and should be provided in a specialist ID setting with close monitoring. [2,4]

2.6 Follow up

Post treatment antibodies should wane, but this can take many years in adults. Current recommendations suggest testing at 12 months post treatment in children and at 2-5 years in adults. [2]

All patients with positive Chagas serology should have regular follow up regardless of treatment status.

This should include annual clinical assessment for cardiac and digestive symptoms and annual 12 lead ECG with (10 seconds Lead II Rhythm strip) and further assessment and referral as indicated.[2,4,5]

For further guidance on paediatric screening please refer to the RCH Melbourne Immigrant Health Service : Chagas Disease

References:

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