



## ORIGINAL ARTICLE

## Seroprevalence and vertical transmission of Chagas disease in a cohort of Latin-American pregnant women in a tertiary hospital in Madrid<sup>☆,☆☆</sup>

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**KEYWORDS**

Chagas disease;  
Vertical transmission;  
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**Abstract**

**Background:** Chagas disease, caused by *Trypanosoma cruzi* (*T. cruzi*), is endemic in Latin-America and is emerging in Spain due to immigration. The vertical transmission rate is around 5%. A routine prenatal screening with serology of all pregnant women from endemic areas is recommended to identify infected newborns, allowing early treatment and cure.

**Objective:** The aim of this study was to estimate the prevalence of positive Chagas serology in a cohort of pregnant women from Latin-America and its vertical transmission.

**Patients and methods:** An observational, prospective, follow-up study was conducted on women with positive serology to *T. cruzi*, as well as their newborns, from January 2013 to April 2015. Congenital Chagas was ruled out using a PCR technique at birth and at 1 month, and with serology at 9–12 months old. A child was considered infected when PCR was positive, and uninfected when PCR was negative, and/or it had a negative serology.

**Results:** Screening was performed on 1.244 pregnant women from Latin-America, and there were positive results in 40 (prevalence 3.2%, 95% CI: 2.4–4.4%), with 85% of them from Bolivia.

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<sup>☆☆</sup> Previous presentations: this study was presented as a poster with discussion titled "Seroprevalencia y transmisión vertical de Enfermedad de Chagas en un hospital terciario de Madrid" at the VIII Congreso de la Sociedad Española de Infectología Pediátrica (SEIP); March 3–5, 2016; Valencia, Spain. Also as an electronic poster with discussion session titled "Vertical transmission of Chagas disease in a cohort of newborns in a tertiary hospital in Madrid" at the 34th Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID); May 10–14, 2016; Brighton, United Kingdom.

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There was only one infected newborn (rate of vertical transmission 2.8% (95% CI: 0–15%)), who had a positive PCR at birth. Relative studies enabled an 8-year-old sister with an asymptomatic disease to be diagnosed and treated. Both were treated successfully with benznidazole (later the PCR and serology were negative).

**Conclusion:** Screening during pregnancy in Latin-American women helped to detect those with Chagas disease. The rate of vertical transmission was 2.8%, in keeping with literature. Screening led to the detection and treatment of previously unidentified familial cases.

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## PALABRAS CLAVE

Enfermedad de Chagas;  
Transmisión vertical;  
Cribado prenatal

## Seroprevalencia y transmisión vertical de enfermedad de Chagas en una cohorte de gestantes latinoamericanas en un hospital terciario de Madrid

### Resumen

**Introducción:** La enfermedad de Chagas, causada por *Trypanosoma cruzi* (*T. cruzi*), es endémica en Latinoamérica y emergente en España, ligada a inmigración. La transmisión vertical se estima de alrededor del 5%. Se recomienda cribado selectivo en el embarazo para identificar al recién nacido infectado, permitiendo tratamiento precoz y curación de la enfermedad.

**Objetivo:** El objetivo de este estudio fue estimar la prevalencia de serología positiva para *T. cruzi* en una cohorte de gestantes latinoamericanas y la tasa de transmisión vertical de la misma.

**Pacientes y métodos:** Estudio observacional prospectivo de gestantes con serología positiva para *T. cruzi* en hospital terciario, desde enero del 2013 hasta abril del 2015. El seguimiento de recién nacidos se realizó con PCR al nacimiento, repetida al mes, y serología a los 9-12 meses. Se consideró infectado al niño con PCR positiva y no infectado al niño con PCR negativa y/o negativización de anticuerpos.

**Resultados:** Se realizó cribado en 1.244 gestantes latinoamericanas, siendo positivas 40 (prevalencia 3,2%, IC del 95%: 2,4-4,4%), 85% procedentes de Bolivia. Solo un niño resultó infectado (transmisión vertical 2,8%, IC del 95%: 0-15%) con PCR positiva al nacimiento. La detección de la embarazada permitió estudiar a los hermanos, detectándose caso asintomático en paciente de 8 años. Ambos tratados con benznidazol con buena tolerancia, evolución favorable y negativización de PCR y anticuerpos.

**Conclusión:** El cribado de embarazadas latinoamericanas ha permitido la detección de gestantes con enfermedad de Chagas. La transmisión vertical fue del 2,3%, coincidente con la literatura. El cribado ha permitido la detección y el tratamiento de casos familiares no identificados previamente.

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## Introduction

Chagas disease, which is caused by the protozoan *Trypanosoma cruzi* (*T. cruzi*), is endemic in Central and South America (with the highest prevalence in Bolivia) and emerging in Spain and other European countries in association with the immigration of individuals from endemic areas to these countries.<sup>1,2</sup>

The main mode of transmission in endemic areas is vector-borne (triatomine bugs), but there are other routes of infection (ingestion of contaminated foods, blood transfusions, organ transplants and vertical transmission). Vertical transmission (whose prevalence is estimated at approximately 5% of newborns of infected mothers in endemic areas and 2–3% in non-endemic areas)<sup>3,4</sup> is the most frequent mode of transmission in Spain.

Selective screening of pregnant women is recommended for the subsequent identification of infected infants, which allows early treatment (better tolerated in the paediatric population) and cure of the disease.<sup>1</sup>

The aim of this study was to estimate the prevalence of positive serologic test results for Chagas disease in a cohort of Latin American pregnant women followed up in our hospital to establish the rate of vertical transmission.

## Patients and methods

We conducted a prospective observational study by following up a cohort of pregnant women with positive serological tests for *T. cruzi* and their newborns in a tertiary hospital in Madrid between January 2013 and April 2015.

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