

RESULTS OF A SYSTEMATIC SCREENING PROGRAMME OF CHAGAS DISEASE IN IMMIGRANT POPULATION IN SPAIN

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Chagas' disease: Public Health Concern

- More than 45% of the cases diagnosed in Europe would appear in illegal immigrants
- 500,000-1,000,000 illegal Latin American immigrants lives in Spain where access to health care has been withdrawn
- 63rd World Health Assembly (2010)
 - ▣ Recognizes the increase in the number of cases of Chagas disease in non-endemic countries
 - ▣ Urges all transmission routes to be addressed
 - ▣ Urges screening, especially in pregnant women, organ donors and blood donors

Chagas' disease

- 1/3 of immigrants who lives in Spain come from endemic zones
- Spain: 68,636 patients, 22,100 of them would be women in fertile age.

Table 11.1 Estimated number of Chagas disease cases in Latin American migrants in Europe

Source	Guerrero-Guttenberg et al. (2008) (19)75	Schmunis (2010) (1)	WHO (2009) (18)	Basile et al. (2011) (15)
Number of Chagas disease cases	24 001–38 708	100 958	>80 000	68 318–123 078

Chagas disease is not systematically monitored by countries in the EU/EAA and there is no European-wide surveillance system to which cases can be reported.

Cases may not be detected, and most health professionals are not trained to diagnose and manage it

Cost-Effectiveness Study

- Decision tree representing the clinical evaluation of the disease throughout the life of the patient.
- Compare cost measured in euros (updated to 2013) and the utility measured in Quality Adjusted Life Years (QALYs).
- **Conclusions:**
 - ❖ **Not screening is the most expensive and less effective strategy.**
 - ❖ Screening of pregnant women, their newborns and first and second degree relatives of positive mothers were the most efficient.
 - ❖ It could be efficient to extend it to the relatives of negative mothers if the treatment effectiveness increases or if the programmes target the population at greater risk.



Objective.

- We describe the results of a screening programme conducted in the immigrant population coming from endemic areas to a region in northern Spain.

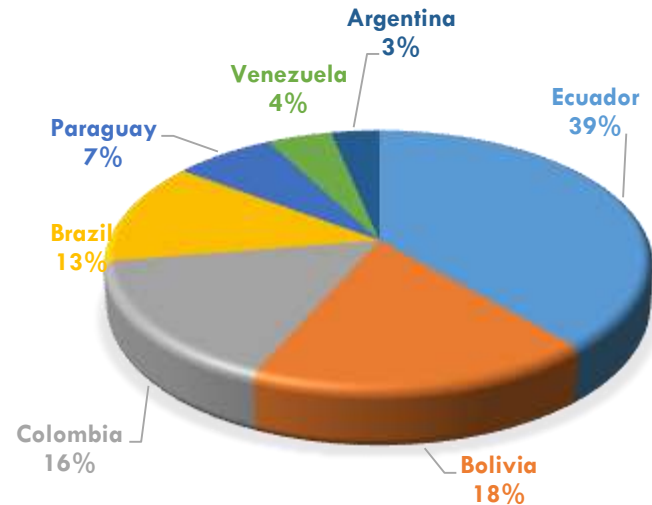
Methods

- Period: 2007 - 2015
- Anti-*T. cruzi* antibodies were determined in all immigrant patients proceeding from endemic areas in follow-up at the Tropical Medicine Unit of the Hospital Central de Asturias, a university hospital in northern Spain.
- The IDChagas antibody test (particle gel immunoassay (OPERON) was used as a screening assay.
- All positive samples were sent to the Centro Nacional de Microbiología (Instituto Carlos III, Spain) to confirm the result by determination of anti-*T. cruzi* antibodies using an indirect immunofluorescent antibody test (IFAT) and by genome detection using polymerase chain reaction (PCR).
- In all the confirmed cases, a protocol that included a clinical epidemiological evaluation, chest X-ray, electrocardiogram, esophagogastrosocopy, barium enema, and echocardiography was applied.

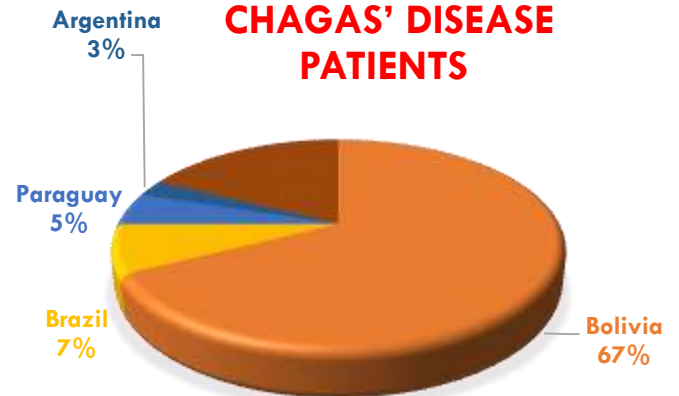
Results

- 281 patients; 67% female
- Mean age: 35[11] years
- Mean time in Spain: 1737 [1316 days]
- **Chagas disease antibodies were detected in 33 patients (11.7%).** All were confirmed by IFAT and PCR.
- Direct microscopic examination of blood was negative in all cases.

COUNTRY OF ORIGIN



CHAGAS' DISEASE PATIENTS



Results

- The country prevalence was
 - 53% for Bolivia ($p = 0.00001$, OR 36 [14-92]),
 - 22% for Argentina ($p=0.637$)
 - 11.4% for Brazil ($p = 0.6$),
 - 10% for Paraguay ($p=0.575$).

Author	Patients	Year	Area	Prevalence	Bolivia
Muñoz J et al., 2009	1350 Pregnant	2005-07	Barcelona	3,4% 7.3% TV	91%
Perez Ayala et al., 2011	1146 Immigrants	2003-09	Madrid	31%	97%
Monge-Maillo B et al., 2009	634 Immigrants	1989-08	Madrid	15,9%	
Rguez-Guardado et al., 2009	64 Immigrants	2006-08	Asturias	14%	66.7%
Rguez-Guardado et al., 2011	19 Immigrants VIH	2008	Asturias	10.5%	

Results

- All positive had lived in houses covered with a straw roof in rural areas of Latin American where the reproduction of triatomine bugs was possible. .
- While two patients reported palpitations, the rest were asymptomatic. Additional studies were normal in all patients.
- All patients were treated with benznidazole (5 mg/kg/day) for 60 days with good tolerance.

Conclusions

- *T. cruzi* infection occurs in non-endemic areas of Europe, where the diagnosis may be even more difficult, hence screening programmes are especially important in this population group.
- The implementation of screening programmes in this population group becomes necessary for an early diagnosis of Chagas disease even in areas with low migratory flows such as Asturias, Spain.