



# ONE-YEAR EXPERIENCE WITH TESTING FOR ANTIBODIES TO *T. cruzi* AMONG ORGAN DONORS IN S. CALIFORNIA – POSITIVE DONOR CHARACTERISTICS

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## Updated to reflect data from April 2007 to May 2008

### Background

*Trypanosoma cruzi*, a parasite that causes Chagas disease, is endemic in parts of Mexico, South and Central America. Transmission of *T. cruzi* infection by solid organ transplantation has been reported in Latin America and United States<sup>1</sup> (Figure 1). Our laboratory began to test organ donors for anti-*T. cruzi* using FDA's approved EIA on April 15, 2007.

### Aim

To evaluate the prevalence of anti-*T. cruzi* positive donors and their socio-epidemiological characteristics.

### Methods

We tested prospectively 512 organ donors recruited from Southern California (Kern, San Bernardino, Santa Barbara, Los Angeles, Ventura, Orange, and Riverside counties). To test for anti-*T. cruzi* we used FDA approved EIA (Ortho Diagnostics) confirmed by IFA+RIPA (Quest Diagnostics).

### Results

- Since April 15, 2007 we tested 512 donors recruited from the population of 18.7 million and identified 3 reactive donors (0.59%).
- All 3 donors had risk factors typical for patients with Chagas disease i.e. travel/extensive length of stay in the areas where *T. cruzi* is endemic (rural areas with substandard housing in Central and South America, Table 1).
- In addition to the 3 seropositive donors, 1 donor (0.20%) who was self-reported to be diagnosed with Chagas disease in the past tested negative by EIA<sup>2</sup>.
- Based on our socio-epidemiologic questionnaire 43% of donors were of Latino descent, 16% were reported to have traveled to areas where *T. cruzi* is endemic and/or stayed for an extended time in housing potentially infested by the vectors of Chagas disease<sup>2</sup> (Table 2).

**Table 1.** Summary of Demographics Data and EIA Results of *T. cruzi* Reactive Donors

| Donor            | 1                                    | 2                     | 3                 |
|------------------|--------------------------------------|-----------------------|-------------------|
| Age              | 56                                   | 47                    | 31                |
| Gender           | M                                    | M                     | M                 |
| Ethnicity        | Hispanic                             | Hispanic              | Hispanic          |
| Initial EIA S/CO | 3.306                                | 1.422                 | 5.472             |
| Repeat EIAs S/CO | 1                                    | 3.320                 | 1.446             |
|                  | 2                                    | 3.386                 | 1.520             |
| RIPA             | Positive                             | Indeterminate         | Positive          |
| IFA              | N/A                                  | Antibody not detected | N/A               |
| Notes            | Travel/Born/ Lived in Jalisco Mexico | Lived in Mexico       | Born in Guatemala |

**Table 2.** Summary of the Chagas Socio-Epidemiologic Questionnaire Study (data collected between 09/2006 and 12/2007)

|   | Total Donors       | %     |       |
|---|--------------------|-------|-------|
| Total Questionnaires  | 491                | N/A   |       |
| No. of Hispanic Donors  | 211                | 43%   |       |
| Question 1. Ever been told to have Chagas Disease?  | 1                  | 0.20% |       |
| Question 2. Ever lived or traveled to Mexico, Central America, or South America?              | 239                | 49%   |       |
| Question 3. How long where you in these regions?  | 98                 | 20%   |       |
| Question 4. While in these regions, did he/she mostly live in the city or in the countryside? | 76                 | 15.5% |       |
| Question 5. While in these regions, did he/she stay in a house(s) or building(s) with:        | Brick walls        | 150   | 30.1% |
|   | Mud or Earth walls | 25    | 5.1%  |
|   | Wood walls         | 25    | 5.1%  |
|   | Thatched roof      | 6     | 1.2%  |

### Conclusion

Our data indicates that a large proportion of donors in Southern California are at risk of being exposed to the vectors carrying *T. cruzi*. However, few have evidence of the actual infections as determined by self report and/or EIA+RIPA testing. Our finding underscores the need to monitor this new and emerging infection risk among organ donors using serological tests rather than self reported risk factors.

### Acknowledgements

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### References

1. Recognizing and Reducing the Risk of Chagas Disease (American Trypanosomiasis) in Travelers. J Travel Med.2008 May-Jun;15(3):184-95.
2. ATC 2008, Toronto, Canada, abstract No. 1483

**Figure 1. Recent *T. cruzi* Cases in the US and Response from Transplant Community**

