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Note added in proof. Since admission of this paper, an additional patient has relapsed, with 262 WBC/μl and trypanosomes in the CSF 15 months after nifurtimox treatment.

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Short Report

Association between *Trypanosoma cruzi* zymodemes and specific humoral depression in chronic chagasic patients

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We previously reported four autochthonous cases of Chagas disease in Bolivia, presenting a particular pattern of negative serology with positive xenodiagnosis (BRENIÈRE *et al.*, 1984). To date, we have observed 13 similar cases (8 women and 5 men), 12 from Bolivia and one from Argentina. The age of these patients ranged from 18 to 58 years (mean 39±13). The clinical features exhibited were diversified: 5 patients presented a cardiac pathology (electrocardiogram) or a digestive pathology (megacolon), or both, while the 8 other patients were asymptomatic. In the present preliminary study, we explored a possible association between the humoral depression and *Trypanosoma cruzi* zymodemes. Eight stocks isolated from patients with negative serology and positive xenodiagnosis and 52 stocks from patients with positive serology and positive xenodiagnosis were characterized by 11 enzyme systems (12 genetic loci), using the genetic interpretation and zymodeme numbering used by TIBAYRENC *et al.* (1986); definitions of positive and negative serology were according to BRENIÈRE *et al.* (1984). Eight different zymodemes were recorded, of which 3 represent more than 90% of our sample, namely zymodemes 19, 20 and 39. Zymodemes 19 and 20 are closely related (only one allelic difference) and were plotted together in the statistical analyses. On the contrary, zymodeme 39 is radically different from 19 and 20. Twenty-nine patients (48%) were infected with either zymodeme 19 or 20, while 18 patients (30%) had zymodeme 39, and 7 patients (11·6%) exhibited a mixture of zymodeme 39 with either 19 or 20. A statistically significant association was observed between specific humoral depression and zymodeme: all serologically negative patients had either zymodeme 19 or 20, and none had zymodeme 39. Yate's corrected χ^2 was 4·19, one degree of freedom and $P<0·05$.

These results confirm the existence of specific humoral depression in some chronic chagasic patients, and shows that this phenomenon can be associated with typical chagasic symptomatology. The association between negative serology and *T. cruzi* zymodeme, although statistically significant in the present set of patients, must be confirmed on a more extensive sample.

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