

Influence of *Leishmania* (*Viannia*) species on the response to antimonial treatment in patients with American tegumentary leishmaniasis.

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BACKGROUND: Pentavalent antimonials (SbV) are the first-line chemotherapy for American tegumentary leishmaniasis (ATL). There are, however, reports of the occurrence of treatment failure with these drugs. Few studies in Latin America have compared the response to SbV treatment in ATL caused by different *Leishmania* species.

METHODS: Clinical parameters and response to SbV chemotherapy were studied in 103 patients with cutaneous leishmaniasis (CL) in Peru. *Leishmania* isolates were collected before treatment and typed by multilocus polymerase-chain-reaction restriction fragment-length polymorphism analysis. **RESULTS:** The 103 isolates were identified as *L. (Viannia) peruviana* (47.6%), *L. (V.) guyanensis* (23.3%), *L. (V.) braziliensis* (22.3%), *L. (V.) lainsoni* (4.9%), *L. (Leishmania) mexicana* (1%), and a putative hybrid, *L. (V.) braziliensis/L. (V.) peruviana* (1%). *L. (V.) guyanensis* was most abundant in central Peru. Of patients infected with the 3 former species, 21 (21.9%) did not respond to SbV chemotherapy. The proportions of treatment failure (after 12 months of follow-up) were 30.4%, 24.5%, and 8.3% in patients infected with *L. (V.) braziliensis*, *L. (V.) peruviana*, and *L. (V.) guyanensis*, respectively. Infection with *L. (V.) guyanensis* was associated with significantly less treatment failure than *L. (V.) braziliensis*, as determined by multiple logistic regression analysis (odds ratio, 0.07 [95% confidence interval, 0.007-0.8]; $P=0.03$).

CONCLUSIONS: *Leishmania* species can influence SbV treatment outcome in patients with CL. Therefore, parasite identification is of utmost clinical importance, because it should lead to a species-oriented treatment.

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