

POSTERS

Hookworm infestation after traveling abroad: A case report

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In early 2007, a stool sample was inadvertently brought to us by a patient invited for hematological examination on suspicion for eosinophilia. Despite the error, it was decided to examine the stool of the patient microscopically where hookworm eggs were detected. The medical history of the patient showed that he was a frequent traveler abroad and about half a year ago he was engaged in digging activities at Machu Picchu, Peru. Previous stool examinations were all negative for worm eggs. The present finding might be related to the last traveling of the patient as hookworm larvae require about half a year after penetration through the skin to mature into adult worm capable of oviposition. Hence, during this period of maturation within the digestive tract, the patient may suffer abdominal discomfort and pains, requiring the attention of a physician, yet stool samples at this stage will prove negative for eggs of the nematode. With the onset of egg deposition by the gravid females, stool examination will become positive, what most probably happened in the present case. The findings were reported to the physician of the patient to initiate treatment. It could be concluded that there is a need of a full and continuous interchange of information between patient, physician and parasitologists.

Molecular characterization of arginine and lysine transporters from *Leishmania donovani*

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We have cloned and functionally characterized from *Leishmania donovani* two genes, *LdAAP3* and *LdAAP7* encoding for permeases that transport arginine and lysine, respectively. Expressing these genes in *Saccharomyces cerevisiae* mutants revealed that both permeases obtain high affinity (K_m around 2 μ M) to their corresponding substrates, with optimum activity at acidic pH. Both permeases localize to the surface membranes and are constitutively expressed in both promastigotes and amastigotes. Interestingly, the two permeases are highly specific to their corresponding substrates. This was unexpected since macrophages that host *Leishmania* transport arginine and lysine via a common permease; the cation amino acid permease 1 (CAT1). Moreover, whereas *LdAAP3* and *LdAAP7* belong to the Auxin/amino acid permease family, CAT1 belongs to the amino acid polyamine family. Interestingly, Starvation of *L. donovani* promastigotes to amino acids induced an increased of arginine transport which paralleled up regulation of *LdAAP3* mRNA and protein abundance. Starvation had no effect on lysine transport and

level of expression. The results suggest that *L. donovani* obtain a mechanism that specifically controls cellular arginine homeostasis.