INVESTIGATION OF THE RELATIONSHIP BETWEEN ADIPOSE TISSUE AND PARASITE BURDEN DURING LEISHMANIA INFANTUM INFECTION IN THE HAMSTER MODEL

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Leishmania infantum infection has been widely investigated in experimental models, mainly in hamsters, due to its high susceptibility to viscerotropic species and the ability to reproduce clinicopathological features of human (HVL) and canine visceral leishmaniasis (CVL). Although the effects on the main organs affected by the disease are well established, the involvement of adipose tissue (AT) is still poorly explored. Adipocytes can act as quiescent reservoirs for parasites, preventing repeated infectious cycles and providing a favorable energetic environment. Investigating the interaction between parasitism and AT may reveal new insights into the pathogenesis of the disease and its clinical manifestations. We focused on understanding the impact of infection on the white and brown AT in *L. infantum*-infected male and female Syrian golden hamsters (*Mesocricetus auratus*) during 90, 120, and 180 days. Our preliminary results have shown that infected male hamsters lost significant amounts of bodyweight, whereas there was no significant difference between the bodyweight of noninfected and infected female hamsters until 180 days. Our data suggest that weight loss is sex-dependent and may be related with changes in eating behavior. Hepatosplenomegaly was observed in male hamsters 90 days after infection. Meanwhile, infected female hamsters only presented hepatosplenomegaly from 120 days. Both males and females' infected hamsters showed kidney enhancement 120 days after infection. Infected male exhibited relative weight reduction in inguinal AT after 120 days and retroperitoneal, epididymal and brown AT after 180 days of infection. Similarly, infected female hamsters showed relative weight reduction in the white AT, retroperitoneal and periovarian, 180 days after infection. Literature is scarce about investigating the role of AT in the pathogenesis of VL. Hence, future investigations are needed to evaluate the maintenance of parasitism as well as the local immune response.

Supported by: UFOP; PROPPI; PROGRAD; CCA-UFOP; FINEP; CNPq; FAPEMIG; INCT-DT.
Funding Agency: FAPEMIG – RED-00032-22; APQ-02494-22; APQ-02511-22. CNPq – 310104/2018-1; 435224/2018-2. INCT-DT.
Keywords: Visceral leishmaniasis; Syrian golden hamster; Adipose tissue.