KINETIC OF DETECTION OF LEISHMANIA DONOVANI DNA IN THE BRAIN DURING EXPERIMENTAL INFECTION IN MICE

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Visceral leishmaniasis (VL) is a systemic disease caused by the *Leishmania donovani* complex, with spleen, liver and bone marrow being major sites of infection. Little is known, however, about whether this parasite reaches the central nervous system, despite some evidence in the literature that suggests this possibility. The aim of this study was to investigate the presence of *L. donovani* DNA in the brain at various time after infection (14, 28, 35 and 56) in C57BL/6 mice. Using qPCR for kinetoplastid DNA, the peak of infection was observed at d28 post infection ($3x10^5 \pm 4x10^5$, $2x10^5 \pm 3x10^5$, $8x10^4 \pm 1x10^5$ and $2x10^4 \pm 1x10^4$ parasites / 25mg tissue in cerebellum, frontal lobe, diencephaplon and occipital lobe, respectively). In addition to a reduction in parasite load at later times of infection, parasite clearance from the brain could also be accelerated by administration of low dose lipopolysaccharides (LPS; 4ng/mouse from d14 to d28), collectively suggesting that brain parasite load may be controlled by immune mechanisms. These data provide strong evidence of the presence of the *Leishmania* parasite in the brain, contributing to a new perspective of the pathogenesis of VL.

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