



Short communication

Longitudinal analysis of cytokine gene expression and parasite load in PBMC in *Leishmania infantum* experimentally infected dogs

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Abstract

Canine visceral leishmaniasis (CVL) is caused by *Leishmania infantum*, an intracellular protozoan parasite that causes a severe infectious disease. To evaluate the gene expression profile associated to CVL *in vivo*, we have measured monthly by real-time PCR over one year the IL-4, IL-10, IL-12, IL-13, IFN- γ , TGF- β and TNF- α mRNA levels in peripheral blood mononuclear cells in 6 experimentally infected dogs that exhibited different progressions of the illness. While in two dogs no parasite, or a very low number of parasites, was detected and the two dogs did not show any clinico-pathological abnormalities at the end of the study (L dogs), for the remaining dogs high parasite loads were detected and they developed clinical leishmaniasis (H dogs). The L dogs have null expression of both IL-4 and IL-13 for the first 4 months after the infection, whereas an early IL-4 and IL-13 expression occurs in this period of infection in most of the dogs that developed clinical leishmaniasis (H dogs). Furthermore, a higher IFN- γ expression was associated with the increase of parasite load and clinical status in these dogs. Moreover, the high variability of expression at the pre-infection stage causes us to reject the possibility that the basal levels of these cytokines indicate the prognosis of the subsequent response against infection.

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