

Hematological and bone marrow dysfunction in C57BL/6 mice infected by *Leishmania donovani*

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Hematological disturbances are a hallmark of human and canine visceral leishmaniasis (VL), caused by *Leishmania donovani* or *L. infantum* infection. Because ethical procedures, mouse model of VL has been extensively studied to explore immunopathological mechanisms. No information provide on hematological dysfunction in this animal model. Thus, we have investigated the VL-associated hematological alterations in C57BL/6 mouse infected by *L. donovani* infection. C57BL/6 mice infected intravenously by *L. donovani*, hematological changes were evaluated at 28 days post-infection when pancytopenia appeared. The bone marrow examination showed both cells morphological changes, an increase in the proportion of myeloid:erythroid and myeloid maturation index, and an erythroid hypoplasia. Moreover, we observed a significant increase in the percentage of lymphocytes and macrophages in infected animals. In histopathological examination, there was a significant increase in the cellularity followed by infiltration and/or proliferation of mononuclear cells similar to macrophages. We characterize these cells by confocal microscopy as F4/80⁺ cells, a typical marker of residents and/or stromal macrophages. By flow cytometry, we found a significant increase in the percentage of F4/80⁺ in proliferation. In addition, we use other markers expressed in macrophages as CD169 and CD11b, and we saw that F4/80+CD169+CD11b+ population was reduced in infected mice. Based on these data, we demonstrated that C57BL/6 mouse is a good model for the study of dyshematopoiesis in VL and further studies are required to understand the role of stromal macrophage in the hematopoiesis during this process.

Keywords: mice, blood, bone marrow, histopathological.

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