

Visceral leishmaniasis (VL) disease is recognized as an important public health problem in countryside (Iraq). The *Leishmania donovani* complex parasites can parasitize the reticuloendothelial cells, The parasite invades internal organs (spleen, liver, bone marrow). The effect of visceral disease of *Leishmania* parasites was studied on liver and spleen in BALB/c mice experimentally infected with *Leishmania donovani* promastigotes. *Leishmania donovani* (MHOM/IQ/1982/BCR1/AA3), were obtained from the *Leishmania* unit at medical research center of Al-Nahrian University. Cultures were carried out using Nicolle-Novy-McNeal (NNN) medium. A solid and liquid phase. The pathological effect was observed on two organs. The progressive of visceral infection was monitoring every two weeks for evaluation the development of weight and length of liver and spleen respectively. The results of this study have demonstrated that the infected mice shown the hepatosplenomegaly sign of pathological efficacy of *L. donovani* promastigote of mice inoculation. The weight of liver was increased with increasing days of infection until reached to (2.30) gm compared with control (1.60) gm of inoculated mice on 12 weeks after parasitic inoculation, also the length of spleen increased with increasing days of infection until reached to (40) mm compared with control (19) mm. Statistical analysis data of weight and length was highly significant differences ($p < 0.05$) between infected and control groups. It was concluded that the pathological changes in visceral organs liver and spleen in experimentally infected mice may be used as indicators for progression of the infection with its severity.