Rate of Infection by *Leishmania infantum* Promastigotes in Murine Macrophages Treated with *Phyllanthus niruri* Leaf Extract

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INTRODUCTION: Protozoa of the genus *Leishmania* are world known to cause leishmaniasis. *Leishmania infantum* is the etiologic agent of visceral leishmaniasis, the most severe manifestation that causes fever, hepatosplenomegaly and can lead to death. Thus searches for antileishmanial biological agents are increasing. **OBJECTIVE:** To evaluate the potential protective effect of *Phyllanthus niruri* leaf extract against infection in murine macrophages by *L. infantum* promastigotes. **MATERIAL AND METHODS:** *P. niruri* leaf powder was extracted in 0.15M NaCl (10%, w/v) overnight followed by centrifugation. Protein concentration and hemagglutinating activity were evaluated. Pre-treatment: murine macrophages in culture plates were treated with extract (300 µg mL^{-1} of protein) and incubated (37 °C, 5% CO_2, 24h); subsequently plates were washed, infected by *L. infantum* promastigotes (for 4h), washed and incubated again (48h). Post-treatment: macrophages were infected by *L. infantum* (for 4h), treated with extract (300 µg mL^{-1} of protein) and incubated (37 °C, 5% CO_2, 48h). Infected macrophages of both treatments were fixed and Giemsa-stained for analysis of infection rate using a light microscopy. Data were analyzed by ANOVA and Tukey's post-test (program SPSS 13.0). **RESULTS AND DISCUSSION:** The extract presented 8.78 mg mL^{-1} of protein concentration and hemagglutinating activity (between 4^{-1} and 16^{-1}), revealing lectin activity. Macrophages pre and post-treated with extract showed rates of infection by *L. infantum* of 32.77% (± 2.47) and 43.15% (± 5.29), respectively. There was no protective effect on macrophages against infection by *L. infantum* ($p>0.05$) although the antiparasitic property is reported to *P. niruri*. This fact may be attributed to inactivation of metabolites in the extract. Potential lectins in extract may be non-toxic on *L. infantum* or can be biologically inhibited if associated with other molecules. **CONCLUSION:** *P. niruri* leaf extract presents lectin activity and has no protective effect on murine macrophages against infection by *L. infantum* promastigotes.

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