HP-05: The potentiel therapeutic effects of Arba alba oil against Toxoplasma gondi

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Objectives: The objective of this study was to analyze the effect of experimental infection by toxoplasmosis on the immune response and to evaluate the potential therapeutic effect of Artemisia herba-alba oil.

Methods: Mice were infected with the Prugniaud cystogenic strain of Toxoplasma,the cysts were collected from the brains of mice and was prepared for intraperitoneal infection of mice two groups were administered the Artemisia herba-alba oil. while other group received treatment with Pyrimethamine + Clindamycin. The immune response was assessed by measuring the concentrations of pro-inflammatory cytokines (IFN-γ, TNF-α, IL-12) in mouse serum using ELISA. The activation of CD4+ and CD8+ T lymphocytes was analyzed by flow cytometry, quantifying the percentages of cells positive for IFN-γ. Granuloma formation was evaluated by histological examination of infected tissues. The levels of IL-10, an immune regulatory cytokine, were measured in the serum of infected mice.

Results and discussion: The mice treated with Artemisia herba-alba oil showed a significant decrease in parasitic burden compared to the infected control group. Similarly,
those treated with Pyrimethamine + Clindamycin, exhibited a significant reduction in parasitic burden. Both groups showed a significant decrease in pro-inflammatory cytokine concentrations compared to the infected control group. The activation of CD4+ and CD8+ T cells was significantly higher than in the infected control. Histological analysis revealed a decrease in granuloma formation in the tissues of oil-treated and Pyrimethamine + Clindamycin-treated mice compared to the infected control group. Furthermore, both treatments indicate a modulatory effect on the immune response.

Conclusion: Our findings demonstrate that the administration of Artemisia herba-alba oil at a concentration of 5 mg/kg have high effencey than and Pyrimethamine + Clindamycin treatment at concentrations of 25 mg/kg and 12.5 mg/kg, respectively, against toxoplasmosis.

Keywords: toxoplasmosis, immune response, therapeutic effect