

Immunohistochemical Study of Cytokine Profile Present In Local Immune Response against Hydatid Cyst

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Introduction: Cystic Echinococcosis (CE) is a zoonotic infection with high prevalence in part of Eurasia, Africa, Australia, and South America. Previous reports show during CE, the distinguishing feature of the host-parasite relationship is that chronic infection coexists with detectable humoral and cellular responses against the parasite, but this response regarding the hydatid cyst fertility is scarcely studied. The objective of the present work is to evaluate locally response of lymphocytes T and B with the cytokine profiles Th1 / Th2 present in adventitial layer (AL) of hydatid cysts.

Materials and Methods: Samples from animals with either fertile or infertile hydatid cysts were included in this study, using 5 samples per condition. Histological samples were evaluated by immunohistochemistry with a panel of antibodies for CD3, CD79a, INF γ , TNF α , IL4 and IL10 molecular markers. Digital images were obtained using an Olympus FSX100 Microscope and analyzed with software for morphometric analysis (Image J).

Results: Immunohistochemical analysis of lymphocyte populations in AL of bovine hydatid cysts showed a predominance of CD3+ T cells compared to CD79+ B cells. With respect to fertility, infertile cysts had a statistical significant increase of CD3+ T cells and CD79+ B cells ($p < 0.01$) in AL. The expression of cytokines showed a statistically significant increase of INF γ and TNF α ($p < 0.02$) in infertile cysts, unlike the fertile cysts that present an increase of IL4 ($p=0.02$) and IL10 ($p=0.2$).

Conclusions: These findings suggest a predominant Th1 polarized local immune response, and a high CD3+ T cell population could contribute to infertility condition of bovine hydatid cysts.