

EVALUATION OF MACROPHAGE ACTIVITY AND ANTIBODY PRODUCTION IN GENETICALLY SELECTED MICE INFECTED WITH *Leptospira* SEROVAR POMONA

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ABSTRACT: The aim of the present study was to evaluate the role of macrophage activity and antibody production in experimental infection with *Leptospira Pomona* in mice genetically selected for high (H) or low (L) humoral immune response. To evaluate macrophage activity, reactive oxygen and nitrogen intermediates were determined. Also, the production of tumor necrosis factor (TNF- α) and the recovery of *Leptospira*-specific antibodies in the kidneys and liver were assessed; histological lesions were analyzed using the hematoxylin-eosin technique, and *Leptospira* antigens in tissues were determined by immunohistochemistry. Results showed that recovery of microorganisms from the analyzed organs was lower in L_{IV-A} mice. However, H_{IV-A} animals showed total restraint since the 14th day after infection, whereas L_{IV-A} mice still had bacteria in the liver at the 21st post-infection day. Immune response against Pomona serovar in those lineages was characterized as high production of antibodies, mainly in late periods of the infectious process. The production of reactive oxygen and nitrogen intermediates also contributed to the elimination of *Leptospira Pomona* in all two lineages; H₂O₂ production was an important factor in H_{IV-A} mice, as well as NO production in the L_{IV-A} animals, mainly at the latest post-inoculation periods. The same occurred regarding TNF- α production. Severe renal lesions were observed at periods in which larger numbers of leptospire were isolated using the culture technique. Tissue alterations persisted in L_{IV-A} mice, even at periods in which leptospire were not recovered. Immunohistochemistry showed to be more sensitive than culturing. However, both techniques were appropriate for the agent identification in the studied lineages. Results suggest that such lineages could represent an important model to investigate pathogenesis and immune response against the varied serovars of leptospire.

KEY WORDS: immunological tests, Biozzi mice, experimental infection, *Leptospira interrogans* serovar Pomona, macrophages.

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