EXPERIMENTAL INFECTIONS OF THE PRIMATE CEBUS APELLA (PRIMATES: CEBIDAE) WITH LEISHMANIA (LEISHMANIA) AMAZONENSIS USING DIFFERENT CONCENTRATIONS OF PROMASTIGOTES: EVALUATION OF THE HUMORAL AND CELLULAR IMMUNE RESPONSE


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These studies are part of a project to evaluate the immunogenicity and effectiveness of Leishvacin® in the experimental Cebus apella model. The principal object of the present experiment was to determine the minimum infective dose of Leishmania (Leishmania) amazonensis that would be suitable to challenge experimentally immunized animals. Four young laboratory bred monkeys were inoculated with 12 day old stationary phase cultures of L. (L.) amazonensis (IFLA/Brazilian Institute of Microorganisms and Parasites). The promastigotes were suspended in a glucose/saline solution and given as a single dose (I: 0.5 x 10⁸, II: 10⁹, III: 1.6 x 10¹⁰, IV: 4.8 x 10¹⁰) intradermally on the dorsal surface of the tail. A blood sample was collected from each animal just before it was inoculated and at 30 and 60 days after the infective inoculation. Plasma from each sample was stored for serological studies, the white cells were separated and cultured in vitro to evaluate cell mediated responses. Tissues samples were collected from the inoculation site 45 days post inoculation (p.i.) for direct parasitological and histopathological examinations and clinical examinations were performed at 15 day intervals. After 1 month monkeys II, III and IV each developed an erythematous papule (12-16mm diameter) at the inoculation site which increased in size, measuring 13-20mm in diameter by 2 months p.i. Animal number I only developed a small nodule 1.5 months p.i. (3mm diameter) that disappeared 2 months p.i. Amastigotes were only detected in the direct smears of animals III and IV. Specific IgG antibodies were measured using an ELISA test and all animals had positive titres at two months. (I: 40, II: 160, III: 1280 e IV: 1280). Titres were higher in the animals that received the larger inoculum. The lymphocyte proliferation tests showed that there was a cellular response one month after the inoculation and that it was greater with the homologous crude antigen. Although monkey IV showed a definite humoral response there were no significant in vitro cell mediated responses. The preliminary results show that a single inoculum of 1.6 x 10¹⁰ L. (L.) amazonensis promastigotes is infective to C. apella and would seem to be best one to use as a challenge after vaccination with Leishvacin®. The immune response of monkeys is compatible to that observed in natural infections of L. (L.) amazonensis in man.

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CANINE VISCERAL LEISHMANIASIS: IMMUNOCYTOCHEMICAL STUDY OF THE MHC CLASS II ANTIGENS IN LIVER AND LYMPHOID ORGANS

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The MHC antigens are involved in cell adhesion in different phases of the immune cellular response. The aim of this work was to study the immunocytochemical expression of MHC class II antigens in the liver and lymphoid organs (spleen, lymph nodes and Peyers's patches) of thirteen 30 month old mongrel dogs experimentally infected and five naturally infected with Leishmania chagasi. Cryosections of liver, spleen, lympho nodes and Peyers's patches were stained by the peroxidase anti-oxidase complex technique (PAP) The immunocytochemical labelling for MHC class II antigens showed the same topography in all organs examined in all animals of the same group or of different groups. However, the MHC class II expression appeared less intense in cervical and abdominal lymph nodes of naturally infected dogs. In leishmaniasis the cellular immune response is known to have remarkable importance, and macrophages presenting MHC II should play a central role in cellular response. In this work we have not observed significant differences in MHC II antigen expression in infected dogs. However, the lower expression in lymph nodes of naturally infected dogs could be indicate that Leishmania chagasi is able to downregulate the MHC II antigen expression.