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The use of a novel DNA vaccine as immunotherapy during Leishmaniasis

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Visceral leishmaniasis (VL) is a zoonotic disease caused by Leishmania infantum in the Mediterranean area and by Leishmania chagasi in (the) Latin America and China. VL currently affects 12 million individuals and it is an opportunistic infection in immunocompromised and/or human immunodeficiency virus-positive patients. Dogs are the main reservoir of Leishmania infantum parasites . Disease management represents a serious problem, since anti-leishmania drugs have limited efficacy in both symptomatic and asymptomatic dogs, which are infective to phlebotomine vectors. In many tropical and sub-tropical countries the development of a safe and easily-available vaccine has high priority. Our previous results demonstrate that real-time assays represent a reliable tool to estimate parasite load. We showed that the simultaneous evaluation of parasites and cytokines levels in different tissues represents a reliable tool to predict the disease development. This study aimed to evaluate the immune response of dogs treated with a DNA vaccine obtained by cloning two Leishmania antigens in the plasmid pVAX. Ten leishmaniotic dogs from a leishmaniasis-endemic area (Naples, Italy) received three consecutive injections of vaccine at 10-days intervals. Another group of 10 leishmaniotic dogs received the same amount of vaccine and an additional dose of 10mg/kg of allopurinol during the period of the study. Leishmania DNA load, IFAT, INF-g and IL4 mRNA expression levels were tested before and after the therapy, every 3 months for a period of 12 months. Analysis of the data indicated an increased INF-γ and a decreased of Leishmania DNA load in all lymph node samples.

Biography

Laura Manna has completed her Ph.D at the age of 29 years from Naples University and postdoctoral studies from School of Veterinary Medicine of University of Naples. She has published 31 papers in reputed journals.

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