

Laboratory tests for diagnosing and monitoring canine leishmaniasis.

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Abstract

Although several reviews on canine leishmaniasis have been published, none thoroughly described clinicopathologic abnormalities and their clinical usefulness. The aim of this review was to provide information concerning current diagnostic tests relevant for clinical pathologists and from a practical perspective. Specifically, in canine leishmaniasis, nonregenerative normocytic normochromic anemia, thrombocytopenia, or leukogram changes may be present. Clinical chemistry and urinalysis may indicate renal dysfunction (azotemia, decreased urine specific gravity, proteinuria) and an inflammatory/immune response (increased acute phase proteins [APP] or α_2 - and/or γ -globulins). Although a potential gammopathy is usually polyclonal, it may also appear oligo- or monoclonal, especially in dogs coinfecting by other vector-borne pathogens. When lesions are accessible to fine-needle aspiration (lymphadenomegaly, nodular lesions, joint swelling), cytology is strongly advised, as the presence of *Leishmania* amastigotes in a pattern of pyogranulomatous inflammation or lymphoplasmacytic hyperplasia is diagnostic. If the cytologic pattern is inconclusive, the parasite should be identified by histology/immunohistochemistry or PCR on surgical biopsies. Alternatively, cytology and PCR may be performed on bone marrow samples where amastigotes, along with erythroid hypoplasia, myeloid hyperplasia, plasmacytosis, or secondary dysmyelopoiesis can be observed. Dogs with overt leishmaniasis generally have high antibody titers, while low titers predominate in immunologically resistant infected dogs or in exposed dogs with no parasite confirmation. Quantitative serology is recommended in clinically suspect dogs as high-titer antibodies titers may confirm the clinical diagnosis. In confirmed and treated dogs, renal function and inflammatory/immune response variables should be periodically monitored.

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PMID: 27805725 [PubMed - as supplied by publisher]