A NOVEL APPROACH TO THE DIAGNOSIS AND TREATMENT OF CANINE HISTIOCYTIC SARCOMA

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ABSTRACT

This work provides a review of canine histiocytic sarcoma (HS) including background immunology, diagnosis, treatment, and prognosis. The use of immunohistochemistry on formalin fixed tissue was evaluated to differentiate HS from soft tissue sarcomas. Initially a dendritic cell marker, CD206, was evaluated; however, due to lack of staining in canine formalin tissue, the study was continued with CD204 and Iba-1 compared to CD18. A western blot was performed to show expression of CD204 in canine histiocytic cells. Only a significant difference in IHC staining scores was seen between these 2 tumor types when using Iba-1 or when combining the IHC scores of the stains together. The use of a combination treatment protocol for HS was also investigated in vitro in the DH82 cell line. Vinca alkaloids and lomustine were evaluated individually and in combination at varying concentrations. While an increase in cytotoxicity was seen with increased concentrations of the drugs individually, no difference was seen in cytotoxicity with combinations. This research also evaluated the use of thymidine kinase 1 (TK1) as a potential biomarker with C-reactive protein in a dual algorithm (neoplasia index) in dogs with a diagnosis of HS. Serum samples were collected at baseline diagnosis and during treatment to monitor the biomarker during course of disease. While TK1 was increased in dogs with HS, no conclusions could be drawn with response to treatment due to the small number of dogs enrolled.