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Effects of Advanced Periodontal Disease on Hematological Parameters in Adult Dogs

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Abstract : Periodontal disease is an inflammatory reaction; therefore, it is predicted that changes may occur in some inflammatory parameters that can be detected in routine blood tests. The objective of this study was to evaluate the hematological and biochemistry changes that occur in dogs affected with advanced stages of periodontal disease. 87 dogs were diagnosed with periodontal disease (PD group), and 76 healthy dogs entered the study. The PD dogs had been affected with periodontitis stage 3 or 4 and were candidates for any dental extractions. The healthy dogs were either referred for annual checkups or for issuing health travel certificates that their owners asked for complete lab tests. Neither the diseased nor healthy subjects had a history of infectious, or other general health problems or surgery in the past 3 months. Age, as well as all hematologic including PCV, WBC and RBC count, Hb, MCV, MCH, MCHC, PLT, CBC, NLR, and biochemistry data, including total protein, albumin, glucose, BUN, Creatinine, ALT, AST, and ALP, were recorded and analyzed statistically. Results confirmed that aging has a significant direct relationship with the advanced stages of periodontal disease. Mild leukocytosis occurred in the diseased group; however, it was not significant. Also, the mean total protein of the PD group was lower than that of the healthy dogs, and serum levels of albumin were found to be lower significantly in the diseased group ($P<0.05$). Mean ±SD amount of Platelet, MCH, and ALT were significantly higher in the diseased group in comparison to the healthy dogs ($P<0.05$). No significant differences were reported in other evaluated parameters. It is concluded that CBC indices of PD dogs are not systemic inflammatory; however, only a decrease in albumin showed inflammatory responses. Some indices in routine laboratory tests can be changed significantly during advanced stages of the periodontal disease dogs.

Keywords : periodontal disease, dogs, hematological factors, advanced stages, blood tests
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