EVALUATION OF ERYTHROCYTE SEDIMENTATION RATE AND LEUCOCYTE PARAMETERS IN HEALTH AND FOLLOWING SURGERY IN DOGS

By

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ABSTRACT

The values of erythrocyte sedimentation rate and leukocyte parameters were determined in fifty-five adult clinical healthy dogs to assess the effect of breed, sex and surgery on these parameters. The dogs were comprised of fifteen intact non-pregnant and non-lactating females and forty intact males. Also, they were made up of forty local and fifteen exotic dogs. Forty dogs were used for the determination of the effect of breed and sex, while fifteen dogs were used for the determination of the effect of surgery on the parameters. About 5mls of blood was collected from the cephalic vein of each dog for the determination of erythrocyte sedimentation rate (ESR), white blood cell count (WBC), absolute neutrophil count (ANC), absolute lymphocyte count (LYM) and neutrophil-lymphocyte ratio (N/L). In addition, experimental gastrotomy (5 dogs) and arthrotomy (10 dogs) were performed. Blood samples were obtained before surgery, immediately after surgery, 24 hours after surgery and 3 days after surgery. The data was expressed as mean ± standard deviation (S.D). Differences in the measured parameters between sex, breed and type of surgery were compared using analysis of variance (ANOVA). A ‘P’ value less or equal to 0.05 was considered significant in all cases. The results of study showed that there were no significant differences in WBC, ANC, LYM and N/L between male and female dogs, as well as, between local and exotic breeds. The ESR was significantly (P< 0.05) higher in the exotic breed (21.2 ± 6.9 mm/hr.) than the local dog (12.8 ± 3.2 mm/hr.). Also, in both gastrotomy and arthrotomy, WBC, ANC and
ESR were significantly (P < 0.05) increased 24 hours after surgery, while there were no significant change in LYM and N/L. In addition, WBC was significantly (P < 0.05) higher in dogs subjected to gastrotomy (34,375 ± 4,762 X 10^6/L) than dogs subjected to arthrotomy (28,710 ± 4,659) 24 hours after surgery. On the other hand, the ESR was significantly (P < 0.05) higher in dogs subjected to arthrotomy (11.0 ± 4.42 mm/hr.) than dogs subjected to gastrotomy (4.75 ± 2.22 mm/hr.) 24 hours and 3 days after surgery. It was therefore concluded that although factors such as breed and sex did not significantly affect the ESR and leukocyte parameters of dogs, surgical intervention and the type of surgery altered the values of these parameters. It is thus recommended that ESR and leukocyte parameters may be used as a prognostic factor to monitor surgical outcome in dogs.