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ELECTROPHORETIC STUDY ON ERYTHROCYTES
IN DOGS : CLINICAL APPLICATIONS

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The aim of the present work was to investigate the validity of using the electrophoretic mobility of erythrocytes in clinical diagnosis of surgical disease in dogs. With an isotonic veronal buffer (pH 7.0 ionic strength 0.173) the electrophoretic mobility of erythrocytes and a histogram of it were obtained from normal dogs and dogs exposed to experimental bleeding, experimental ileus and clinical diseases.

The following results were obtained :

1) In adult dogs, the mean of electrophoretic mobility of erythrocytes was $-1.192 \pm 0.009 \mu/\text{sec}/\text{v}/\text{cm}$, and in young ones -1.224 ± 0.008 . In spite of individual differences, this result supported the finding that young animals have a higher negative charge on the erythrocyte surface than adult ones. In both age groups male dogs had the higher mean of the electrophoretic mobility of erythrocytes than female ones. In most of the adult and young dogs, there was one peak in the histogram of the electrophoretic mobility of erythrocytes.

2) After bleeding the electrophoretic mobility of erythrocytes first decreased and then increased with increase of reticulocytes. With the increase of electrophoretic mobility, a group, which had a higher negative on the erythrocyte surface, appeared in the histogram and it showed two peak distribution.

3) In the case of ileus, the persistence of the obstruction caused an acceleration in the electrophoretic mobility of erythrocytes. At the point of aggravation there was heterogeneity of the cell population in the histogram of electrophoretic mobility of erythrocytes.

4) In clinical cases, malignant tumors caused acceleration of the electrophoretic mobility of erythrocytes and heterogeneity of the cell population in the histogram of electrophoretic mobility of erythrocytes.