EXPERIENCE WITH PELGER-HÜET ANOMALY

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Introduction: Pelger-Hüet anomaly is an inherited disorder of maturation of myeloid cells, in particular granulocytes and monocytes. Nucleus hyposegmentation, respectively hypolobulation, of these cells is the hallmark of this anomaly. Pelger-Hüet anomaly is often misinterpreted as inflammatory disease or preleukemic syndrome, which can lead to unnecessary diagnostics and treatment. Predisposition to Pelger-Hüet anomaly has been described in Australian Shepherd, Australian Cattle Dog, Basenji, Border Collie, Cocker Spaniel, German Shepherd and Samoyed.

Aims: The principal aim of our study was to estimate the prevalence of Pelger-Hüet anomaly in Australian Shepherds in the Czech Republic. The second aim was to perform grading according to Bowles in Pelger-Hüet positive and negative Australian Shepherds and to compare mean nuclear score between these two groups.

Results: In total, blood smears of 79 Australian Shepherds were evaluated. In 18 dogs (22.8 %), Pelger-Hüet anomaly was detected, 61 dogs (77.2 %) were Pelger-Hüet negative. In the USA, Pelger-Hüet anomaly was found in 9.8 % Australian Shepherds. Our results suggest that the prevalence of Pelger-Hüet anomaly in Australian Shepherds in some regions may be much higher and affect almost one quarter of dogs. In Pelger-Hüet positive dogs, mean nuclear score according was 2.56±0.26 in neutrophils and 2.58±0.29 in eosinophils. In 10 Pelger-Hüet positive dogs (55.6 %), monocyte hypolobulation was observed. In Pelger-Hüet negative dogs, mean nuclear score was 5.90±0.42 in neutrophils and 4.66±0.27 in eosinophils. Monocyte hypolobulation was not noted in any of these dogs. Calculation of neutrophil and eosinophil mean nuclear score revealed clear separation between Pelger-Hüet positive and negative dogs. Monocyte hypolobulation was less obvious than granulocyte hyposegmentation. Mean nuclear score values are in agreement with data obtained in Foxhounds and a Danish/Swedish Farmdog. So far, mean nuclear score have not been determined in Australian Shepherds. Our results suggest that especially neutrophil mean nuclear score can realiably distinguish Pelger-Hüet positive and negative dogs. Awareness of Pelger-Hüet anomaly is essential to avoid excessive diagnostics and treatment in Pelger-Hüet positive dogs. Pelger-Hüet anomaly has also consequences for dog breeders, as mating two Pelger-Hüet positive dogs can lead to mortality in up to 25 % puppies.

References available upon request.