

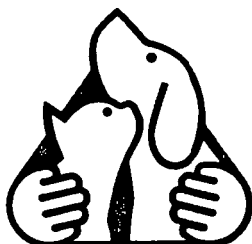
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CHANGES IN EOSINOPHILS, PLASMA CORTISOL AND PLASMA ACTH HORMONE IN IATROGENIC CUSHING'S SYNDROME IN THE DOG

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Introduction: In the present experiment iatrogenic Cushing's syndrome was produced artificially in dogs by long-term administration with glucocorticoid. In these dogs changes in eosinophils, plasma cortisol, and plasma ACTH hormone were examined with the lapse of time.

Materials and Methods: The dogs used had been raised at the authors' laboratory. They were 8, or 3 male and 5 female, beagles 3-10 years old weighing 9-12.5 kg. They were injected intramuscularly with 4 mg of dexamethasone (DXM), as a glucocorticoid, daily for 60 days. Blood samples were collected from them at intervals of 3-5 days after the beginning of injection. The plasma levels of cortisol and ACTH were estimated by the radioimmunoassay method.

Results: (1) To clarify the effect of DXM administered upon eosinophils (EO), cortisol (FK), and ACTH, variance analysis was performed by dividing the experimental period into 3 stages, before and during injection with DXM and during treatment. As a result, EO, FK, and ACTH showed a significant variance ($P < 0.01$, $p < 0.05$), suggesting that there might be some variations in each stage. The test of significance was carried out to elucidate the trend of variation. It revealed that EO, FK, and ACTH began to decrease significantly ($p < 0.01$) in level at 3 days of injection. They remained at significantly low levels ($p < 0.01$, $p < 0.05$) throughout the stage of injection with DXM. When treatment was started, EO and FK tended to increase gradually. They were significantly high ($p < 0.01$, $p < 0.05$) in level about 10 days after the beginning of treatment and later. ACTH tended to rise in level, but failed to be high enough in level to be significant by 100 days after the beginning of the experiment.

(2) To clarify the trend of variation of EO, FK, and ACTH, each dog was examined for a correlation between variates. In every dog there was a positive correlation significant ($p < 0.01$, $p < 0.05$) between EO and FK, EO and ACTH, and FK and ACTH. It was suggested that there might be a correlation in the trend of variation among EO, FK, and ACTH.