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EXPRESSION OF LH RECEPTORS IN ADRENAL GLANDS OF FERRETS TREATED WITH GNRH-AGONIST IMPLANT

Introduction

Adrenocortical tumors (AT) in neutered ferrets are associated with excessive sex steroid production. The mechanism behind this is increased secretion of gonadotropins, predominantly luteinizing hormone (LH) in combination with the presence of functional LH receptors (LHRs) in the adrenal cortex. Unregulated elevation of LH and its binding to the LHR causes elevation of sex hormones and adrenocortical proliferation, which may even lead to malignant transformation. As an alternative method for estrus-prevention in ferrets, gonadotropin releasing-hormone (GnRH)-agonist implants can be used. The goal of this approach is downregulation of GnRH receptors in the pituitary gland and an inhibition of production and release of gonadotropins. The effects of GnRH-agonists on the expression of the LHR in the adrenal cortex are still unknown.

The **aim of the study** was to compare the relative mRNA expression of the LHR in adrenal glands of surgically castrated ferrets and those treated with a GnRH-agonist implant.

Material and Methods

The adrenal glands of 19 ferrets were used in this study, with 11 ferrets belonging to the GnRH-agonist group and 8 ferrets to the castrated group. The mRNA expression of LHR was measured using RT-qPCR.

Results

The relative mRNA expression of LHR in adrenal glands in ferrets treated with GnRH-agonist implants was significantly lower compared to surgically castrated ferrets ($P = 0.035$).

Conclusions

The lower mRNA expression of the LHR in ferrets treated with a GnRH-agonist compared to surgically castrated animals is in agreement with the proposed working mechanism of the GnRH-agonist. The association of this finding and the proliferating capacity of adrenocortical cells in ferrets treated with GnRH-agonist deserves further investigation.