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TAMOXIFEN AND CLOMIPHENE HAVE OESTROGEN AGONIST ACTIONS ON THE REGULATION OF LH SECRETION IN RED DEER HINDS

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Steroid-dependant, namely oestrogenic, suppression of the neuroendocrine axis which regulates the secretion of LH is partly responsible for the seasonal anoestrous state in mammals. In an attempt to overcome this blockade of reproduction we carried out three studies to investigate the effectiveness of two anti-oestrogens, tamoxifen and clomiphene, in red deer hinds. During the non-breeding season lactating (n=8) and non-lactating (n=7) intact hinds received 20 mg tamoxifen s.c. daily for 10 days; lactating controls (n=8) received vehicle only. In a second experiment, ovariectomized hinds were injected i.m. with 20 mg tamoxifen (n=5) or vehicle (n=4) followed by 10 mg tamoxifen i.m. (or vehicle) 2 h later, and 100 μg 17β-oestradiol i.m. after a further hour. Thirdly, in another series of experiments, ovariectomized hinds were injected with vehicle followed 4 h later by either tamoxifen (10 mg i.v., n=5) or clomiphene (1 mg/kg liveweight i.m., n=3) or vehicle (n=4). There was no effect of tamoxifen on LH pulse amplitude or frequency in intact hinds nor on the ability of oestradiol to lower plasma LH concentration in ovariectomized hinds. In contrast tamoxifen and clomiphene reduced ($P<0.05$) the number of LH pulses/4 h from 3.8 ± 0.6 and 4.3 ± 0.3 to 1.6 ± 0.4 and 2.7 ± 0.7, respectively, in ovariectomized hinds.

These results show that tamoxifen and clomiphene have oestrogen agonist properties at the site of regulation of LH secretion in female red deer.