

EFFECT OF EXOGENOUS PROSTAGLANDIN $F_{2\alpha}$ ON PLASMA CONCENTRATIONS OF OXYTOCIN DURING THE ESTROUS CYCLE IN CONTROL AND HYSTERECTOMISED SHEEP AND FALLOW DEER

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The possibility that ovine and cervine corpora lutea (CL) have a finite capacity to produce oxytocin independent of progesterone secretion and of the presence or absence of the uterus was examined in intact and hysterectomised sheep and fallow deer.

Nineteen ewes were synchronised and nine were hysterectomised on day 5. On day 14, five of the hysterectomised and the ten control ewes were injected with cloprostenol and mating recorded. Eleven days later all ewes were challenged with Prostaglandin (PG) $F_{2\alpha}$ (123 μ g, i.m.) and the plasma oxytocin response measured. The five hysterectomised sheep treated with cloprostenol all showed estrus 2 days later and were thus at day 8 at PG challenge. The other hysterectomised ewes CL were 25 days old. The ewes at day 8 all showed at least a 10 fold increase in plasma oxytocin levels within 5-10 minutes of PG injection. In contrast there was no response measured in any of the day 25 ewes. The intact control ewes ranging from day 7-day 12 all showed at least a 10 fold rise in plasma oxytocin.

These hysterectomised and three intact control fallow deer does were synchronised using Estrumate and CIDR treatments before being challenged with PG $F_{2\alpha}$ (125 μ g, i.m.). The control does were at day 9 of the cycle ???????? whereas the CL in the hysterectomised does were 31 days old. Plasma oxytocin concentrations in the control does reached maximum levels 10-20 minutes after PG $F_{2\alpha}$ challenge. No such response was observed in the hysterectomised does.

These results indicate that day 25 ovine and day 32 cervine CL do not release oxytocin after a physiological PG stimulus.