

TESTOSTERONE DECREASES TO BASAL VALUES WITHIN 24 h FOLLOWING CASTRATION IN LLAMAS

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The objective of this study was to compare serum testosterone concentrations ([T]) in adult male llamas (*Lama glama*) following administration of human chorionic gonadotropin (hCG) before and after castration. This information is of diagnostic significance for the determination of retained testicular tissue following surgery or in the case of a cryptorchid male. Seven intact adult male llamas were used in this experiment. Jugular venous blood samples were collected prior to intravenous administration of hCG (5000 IU; Chorulon[®], Intervet) as well as 2, 4 and 8 h post-hCG. The llamas were castrated using routine surgical techniques 24 h post-hCG. Testes were removed from the vaginal tunica, the epididymides were removed, and the testes were weighed. A post-castration hCG response test was performed 24 h after castration (48 h from the previous hCG response test). Serum [T] was measured using a double antibody radioimmunoassay (Diagnostic Products Corporation, Los Angeles, CA). The assay sensitivity was 0.05 ng/ml and the intra- and inter-assay CVs were <10%. All of the samples were tested within one assay. The mean [T] at each treatment time were compared using an analysis of variance. In addition, [T] were compared to total testicular weight using linear regression. Significance was defined as $p < 0.05$. The results for individual animals are summarized in the table below. The [T] was significantly increased from pre-hCG values within 2 h post-hCG ($p < 0.001$) and remained significantly elevated until 8 h post-hCG. The highest [T] occurred at 8 h post-hCG. At 24 h post-castration (48 h post-hCG), the [T] was below the limits of detection. There was a poor correlation ($r = 0.33$) between [T] and total testes weight. In conclusion, serum [T] falls to undetectable values within 24 h following castration. However, ejaculation of fertile sperm and “male” behavior may persist for days to weeks following gonadectomy.

Keywords: Castration; hCG; Llama; Testes; Testosterone

ID	Total testes weight (g)	Serum testosterone concentrations (ng/mL)				
		Pre-hCG	2 h post-hCG	4 h post-hCG	8 h post-hCG	48 h post-hCG (24 h post-castration)
1	35.86	1.46	5.04	5.32	5.71	<0.05
2	30.07	0.94	6.89	8.48	9.73	<0.05
3	38.55	2.09	10.14	12.35	15.66	<0.05
4	32.68	0.62	5.09	6.10	7.51	<0.05
5	21.99	0.53	6.08	9.41	10.42	<0.05
6	42.04	2.99	5.46	5.57	8.22	<0.05
7	9.92	0.25	2.76	3.31	3.58	<0.05
$\bar{X}$	30.16	1.26	5.92	7.22	8.69	

Species Abstracts

Small Animal

A SINGLE INJECTION OF LONG-ACTING DESLORELIN DOES NOT INDUCE ESTRUS IN BITCHES

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The objective of this study was to determine serum deslorelin concentrations using radioimmunoassay and enzyme immunoassay following intramuscular administration of a compounded-form of long-acting deslorelin (BioRelease[™] deslorelin, BET Pharmacy; Lexington, KY, USA). Eight mature anestrous beagle bitches were used. Each treatment consisted of a 1 ml (1.5 mg BioRelease[™] deslorelin) injection administered into the epaxial muscle. Vaginal cytologies and jugular venous blood samples were collected daily for 10 days beginning on the first treatment day. Serum progesterone concentrations were determined using a chemiluminescent assay. Serum deslorelin concentrations were determined using a double antibody radioimmunoassay (RIA) (Peninsula Laboratories, Inc.; San Carlos, CA). The RIA sensitivity was 1 pg/ml; intra-assay CV was <5% and inter-assay CV was <10%. In addition, serum desloreslin concentrations were determined using an enzyme immunosorbent assay (EIA) (Peninsula Laboratories, Inc.). The EIA sensitivity was