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Abstract

Calving was induced in 26 of 29 Polled Hereford cows that were injected between 271 and 287 days of gestation intramuscularly with 20 mgs. Of dexamethasone (Azium) and 10 mgs. ECP (estradiol cypionate). Oxytocin, give to cows that had not calved by 40 hours after dexamthasone injection, shortened the average interval to calving (15.4 hours if returned to pasture, 16.1 if in confinement compared with 32.6 hours with no oxytocin). Three cows did not respond to treatment. ECP did not reduce retained placentas; 77% of the cows induced to calve retained membranes.

Keywords

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Induced Calving in Beef Cattle

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Summary

Calving was induced in 26 of 29 Polled Hereford cows that were injected between 271 and 287 days of gestation intramuscularly with 20 mgs. of dexamethasone (Azium) and 10 mgs. ECP (estradiol cypionate).

Oxytocin, given to cows that had not calved by 40 hours after dexamethasone injection, shortened the average interval to calving (15.4 hours if returned to pasture, 16.1 if in confinement compared with 32.6 hours with no oxytocin). Three cows did not respond to treatment.

ECP did not reduce retained placentas; 77% of the cows induced to calve retained membranes.

Introduction

Inducing parturition in farm animals, especially beef cattle, is a management tool in cow/calf production systems. Any stimulus used to promote parturition before the end of gestation is called induced parturition. Dexamethasone has effectively induced calving late in gestation; however, calving is still scattered over several days. The high incidence of retained placenta by induced cows is a serious disadvantage.

In this experiment we attempted to shorten the interval to calving by injecting oxytocin after injecting dexamethasone and to determine if ECP would reduce retained placenta.

Experimental Procedure

Twenty-nine Polled Hereford cows were injected intramuscularly with 20 mgs. dexamethasone (Azium, Shering Corp., Kenilworth, N.J.), 10 mgs. ECP (estradiol cypionate, The UpJohn Co., Kalamazoo, Mi.) and 10 cc. combiotic. Cows that had not calved by 40 hours post-injection were allotted into three groups. All three groups received 10 mgs. ECP and two groups received 100 u.s.p. units of oxytocin (Med-Tech Inc., Elwood, Ks.). One oxytocin group was returned to pasture while the other was held in confinement. Cows were 271 to 287 days gestation when injected with dexamethasone.

Calving assistance was given when necessary. Cows that had not expelled the placenta within the 96-hour experimental period were treated with 20 cc. combiotic for two consecutive days.

Results and Discussion

Times of calving for each treatment group are shown in table 4.1 . Five cows calved within 40 hours after dexamethasone was injected (avg. 31.7 hrs.). Six of eight cows receiving only ECP after dexamethasone calved an average of 32.6 hours post injection. Oxytocin in addition to the ECP shortened the average interval from injection to calving; confinement had no affect. Two cows in the ECP only group and one in the confinement group did not calve in response to treatment.

Eight percent (or 2 of 26) of the induced cows required assistance when calving. Seventy-seven percent of the induced cows retained placenta, indicating that ECP was not effective.

Table4.1. Results of Induced Calving with Dexamethasone (DEXA) and Estradiol Cypionate (ECP).

COWS CALVING WITHIN 40 HOURS AFTER DEXA AND ECP

Cow No.	Hours from DEXA to fetal expulsion	Placenta
006	21.0	clean
311	32.5	clean
932	35.0	clean
2106	35.5	clean
3100	34.5	clean
	31.7 average	

COWS INJECTED WITH ECP 40 HOURS AFTER DEXA

Cow No.	Hours from DEXA to fetal expulsion	Hours from ECP to fetal expulsion	Placenta
135	50.0	10.0	retained
289	70.0	30.0	retained
360	90.0	56.5	retained
590	70.5	30.5	retained
905	70.5	30.5	retained
949	20.0 days	18.0 days	----
2108	78.5	38.5	retained
3128	15.0 days	13.0 days	----
	65.3 average	32.6 average	

(averages for 6 of 8 calving within 96 hrs.)

COWS INJECTED WITH ECP AND OXYTOCIN 40 HOURS AFTER DEXA AND RETURNED TO PASTURE

Cow No.	Hours from DEXA to fetal expulsion	Hours from OXYTOCIN to fetal expulsion	Placenta
173	62.5	22.5	retained
268	42.5	2.5	retained
301	58.0	18.0	partially ret.
310	52.5	12.5	retained
520	89.5	49.5	retained
957	48.0	8.0	retained
963	47.5	7.5	retained
2116	43.0	3.0	retained
	55.4 average	15.4 average	

(averages for 8 of 8 calving within 96 hrs.)

COWS INJECTED WITH ECP AND OXYTOCIN 40 HOURS AFTER DEXA AND HELD IN CONFINEMENT

Cow No.	Hours from DEXA to fetal expulsion	Hours from OXYTOCIN to fetal expulsion	Placenta
048	41.0	1.0	clean
069	43.5	3.5	retained
169	80.5	40.5	retained
172	44.5	4.5	retained
305	76.0	36.0	retained
495	63.5	23.5	retained
946	8.0 days	6.0 days	----
1107	43.5	3.5	retained
	56.1 average	16.1 average	

(averages for 7 of 8 calving within 96 hrs.)