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HORMONALLY-INDUCED ABORTION AND PARTURITION IN GOATS AND EWES

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SUMMARY

Induced abortion and parturition have been practiced in both goats and ewes following the hormonal treatments. The intervals between injection and parturition or abortion in goats were 47.29± 3.981 and 47.5±2.872 hours with intramuscular injection of 1 ml. Luprostiol (each 1 ml. contains 7.5 mg. prostaglandin F2 α) and 58.8±6.681 and 91.2±6.652 hours with double intramuscular injection of 3 ml. corticotets (each 1 ml. contains 2.5 mg prednisolone acetate and 5 mg dexamethasone) respectively. The intervals between injection and either the parturition over 148 days or abortion at 138 days of gestation in ewes were 40.4±4.019 and 66.5±5.852 hours respectively with double intramuscular injection of 3 ml. corticotets, however, there was no response with luprostiol.

The commbination of the compounds gave better results in bothe the goat and ewes, although better results were obtained following Luprostiol treatment in goat and corticotets in ewes in both parturition and abortion.

INTRODUCTION

The possibility of induced parturition in different species at a suitable time of gestation has been practiced by many investigators following the administration of esogenous hormones in bovine (1,2), equine (3,4), ovine (5,6), and caprine (7,8)

Induced abortion was practiced as an effective treatment for specific pathological disorders of pregency such as prolonged gestation in bovine (9) or pregnancy toxaemia in ovine (10). Acceptable results of induced parturition near the term in ewes and goats have been obtained following an intramuscular injection of various formulations of the corticosteroids at a dosage levels ranged between 10mg-25mg (11,12,13)

Similar results have been achieved in goats following the injection formulations of prostoglandin F2 αat dosage level up to 15mg. intramuscularly (14,7).

The present study is intended to find out the effeciency of the abortificients and their combinations that were used in the routine clinical treatment in goats and ewes.

MATERIALS AND METHODS

The research has been carried out at the Departments of Theriogenology and Pharmacology, College of Veterinary Medicine, Baghdad University.

The flocks of Awassi ewes and Karadi goats were subjected to estrous synchronization on the 5th of October, 1985 following the double injection regime (nine days apart) of 1ml. Iuprostiol 7.5mg. Intramuscularly. Their matings were recorded follwing the observation of markings by males wearing a raddle harness that their crayon's colors were changed daily and last recorded date of mating was regarded as the first day of pregnancy.

Twelve ewes and 12 goats were selected according to their mating date irrespective to their age, body weight and number of parturition (15). On day 138 of gestation (last ten days) each female was injected intramuscularly either single dose of 1ml. of luprostiol, double doses of

3ml. Corticotets or their combinations.

In addition clinical cases of prolonged gestation during the academic years 1984-1985 of over 148 days in goats according to Bosu *et al* (14) and 146 days in ewes according to Scott and Robinson, (15) were also included in this investigation and they were treated hormonally (Table 1).

Pregency was confirmed by method of Hulet (16). Following treatment, the females were kept under close observation and the time between injection and the expulsion of the fetuses or their fluid, were recorded in hours, Other observation like the presence of milk, vulvar swelling and vaginal secretions were recorded as well to help in the prediction of parturition time. Student's test was applied for statistical analysis (17).

RESULTS

The results summarized in table 1 and table 2 indicated that the intervals between single injection of 7.5mg. luprosticl or double injection of 3 ml. corticotets and the induced parturition in goats were 47.29±3.981 and 58.8±6.681 hours respectively without significant differences. on the other hand in ewes the response was only to the corticotets and the interval was 40.4±4.019. The intervals between single injection of ml. corricotets or their combination induced abortion in goats were 47.±2.872, 91.2±6.652 and 42.0±3.464 hours with significant differences ($p<0.05$) (Table 2). On the other hand in ewes the response was only to the corticotets and its combination with luprostiol and the intervals were 66.5±5.825 and 57.0±5.196 hours respectively. However, the intervals between the single injection of 7.5mg. luprostiol and either parturition or abortion was not significant in both species. While the case with double injection of 3 ml. corticotets, the differences were significant ($p<0.05$) in both species whether induced parturition or abortion (Tables 1 and 2).

Table 1: Intervals between hormonal injection and parturition in goats and ewes with prolonged gestation.

Species	Hours between injection and Parturition (Means ± S.E)		Sign.Diff between treatments(p<0.05)
	7.5 mg.Luprostiol	3ml.Cortic-otets	
Goats	47.29 ± 3.981	58.8 ± 6.681	
No.	17	5	N.S
Ewes	--	40.4 ± 4.019	Corticotets >
No.	3	15	Luprostiol

* Double injection 24 hours apart.

Table 2: Intervals between hormonal injection and abortion in goat and ewes at 138 days of gestation.

Species	Hours between injection and abortion (Meand±S.E.)			Signf.Diff. between 3 treatments(p<0.05)
	7.5mg.Lup-rostiol	3ml.Corti-cotets	Combined treatment	
Goats	47.5±2.872	91.2±6.652	42.0±3.464	Luprost and comb. >
No.	4	4	4	Corticotets
Ewes	--	66.5±5.852	57.0±5.196	Corticitets and comb.> Luprostiol

Double injection 24 Hours apart.

DISCUSSION

The effectiveness of the 7.5 mg. luprostiol in inducing either parturition or abortion at 138 days of gestation reflect the fact that the functioning ovarian corpus luteum is necessary to maintain pregancy in goats (8) since the placental progesterone would never reach the optimal level of 15 mg/ml. that produced by the ovarian corpus luteum as observed by Bosu et al (14). Although there was no significant differences between induced parturition and abortion in goats following the injection of 7.5 ml luprostiol which were 47.29±3.98 and 47.5±2.87 respectively and that might indicate the possibility of inducing abortion once the corpus luteum is removed and those findings become in agreement to the observation of Bosu *et al* (14) and Cook and Knifton (8).

On the contrary, the ewes did not show any response to the 7.5 mg. luprostiol treatment and that might be due to the fact that placental progesterone at 15 mg /ml (14) was quite sufficient to preserve pregnancy or the 7.5 mg luprostiol was not enough to produce uterine contraction and cervical dilation,however, higher dosage was precautioned in order to avoid the expected troublesome rectovaginal prolapse (14).

The effeciency of the corticosteroids in inducing abortion in both species seemed to be more effective as the gestation progress toward it's termination and as it's dosage was repeated after 24 hours, however, the differences were significant ($p<0.05$) (15,10,12,13) which is in agreement with the finding of Emady et al (15), Hunt (10), Smith (12), and Harison (13). However, this is probably due to the fact of natural rising in the endogenous fetal corticosteroids toward the end of gestation along with maternal endocrine changes in preparation of parturition. Thus, the addition of exogenous corticosteroids to the endogenous steroids that is already present should hasten the initiation of parturition especially in ewes (15,10,5,6,13,11).

Although the effective abortificients of the luprostiol in goats and the corticotets in ewes, however, their combination showed no significant differences but it seemed to be helpful as illustrated in table 2 and that

might be due to the luteolyic activity of the luprostiol in ewes and the reduction activity of the corticotets to the palcental progestrone in goats.

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احداث الاجهاض والولادة في الماعز والنعاج هرمونيا

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الخلاصة

تم احداث الاجهاض والولادة في كل من الماعز والنعاج هرمونيا، وقد كانت الفترات بين الحقن الهرموني وحدوث الولادة او الاجهاض في النعاج ٩٨١ر٣±٢٩ر٤٧ و ٨٧٢ر٢ ± ٥ر٤٧ ساعة بعد حقن ٥ر٧ ملغم من مستحضر البروستاكلاندين & PGF2 (الوبرستيول) و ٦٨١ر٦ ± ٥٨ر٨ و ٦٥٢ر٦ ± ٢ر٩١ ساعة بعد حقنتين من ايستيرويدات القشرة القظرية (كورتيكوتسن) بمقدار ٣ مليمتر بالعظل على التوالي. ولفترات بين الحقن الهرموني والولادة او الاجهاض في النعاج كانت ٠١٩ر٤±٤٠ر٤ و ٨٥٢ر٥ ± ٦٦ر٦ ساعة على التوالي بحقنتين من ايستسرويدات القشرة القظرية (كورتيكوتس) بمقدار ٣ مليمتر بالعظل على التوالي وعلى اي حال لم نشاهد اية استجابة بالنسبة للبروستاكلاندين & PGF2 المستحضر في النعاج من جهة اخرى فان مزج الهرمونين الانفة الذكر قد اعطت نتائج افضل في كل من الماعز والنعاج.