

INDUCTION OF ABORTION IN IRAQI GOATS USING BROMOCRIPTINE

Al-Hamedawi, T.M.; Khammas, D.J.; Al-Timimi, I.H. and Al-Yasiri, E. A.

Department of Surgery and Obstetrics, College of Veterinary Medicine, University of
Baghdad. Baghdad, Iraq.

(Received 20 April 2009, Accepted 28 September 2009)

Keywords: Abortion, Goats, Fetal membrane.

ABSTRACT

Twenty pregnant goats at gestation period ranged from 100 – 130 days were used in this study and divided in to four groups according to duration of gestation period. G (A) = 100 – 110 days, G (B) = 111 – 120 days, G (C) = 121 – 130 days. All of the goats were injected with a single dose of 2.5 mg / kg B.W. Bromocriptine I.M. The fourth group also 5 goats G (D) = 120 – 130 days were used as control & given 2 ml distal water I.M.

Results showed that 80% of G (A) aborted after 5.12 ± 1.74 days, 60% of G (B) aborted after 4.92 ± 1.15 days and 60% of G (C) aborted after 4.97 ± 1.15 days of injection. In addition all the aborted goats showed complications represented by retention of fetal membranes and subsequent uterine infection compared to controls which showed neither abortion nor complications.

INTRODUCTION

Induction of abortion is occasionally used in small ruminants but it can be considered as an emergency method to save the life of the dam particularly in cases of pregnancy toxemia (1). Bromocriptine is an ergotamine derivative alkaloid (2) and it has a vasoconstrictor effect and therefore cause abortion in human in high doses (3) and they suggested that the toxicity on uterus from spoiled grain with ergot, a marked uterine contraction may be produced, the uterus becomes progressively more sensitive to ergot alkaloid during pregnancy. In another study, it has been suggested that bromocriptine has no effect on uterine contraction (4). Drugs and hormones were used by several authors to induce abortion in different species (5). But bromocriptine has not been tried before in these respect

particularly in goats thus we planned to investigate the effect of bromocriptine in induction of abortion in pregnant many goats.

MATERIALS AND METHODS

Twenty pregnant Iraqi goats between 3-5 years were used in this study and they divided in to four groups (5 goats in each group) according to their gestation period depending on their date of natural insemination.

Group A = 100-110 days gestation

Group B = 111-120 days gestation

Group C = 121-130 days gestation

All of the three groups were injected with a single dose of 2.5 mg / Kg B.W bromocriptine I.M. The forth group (Group D) = 120-130 days were used as controls and given a single injection of 2 cc distal water I.M. Statistical analysis was conducted according to (6).

RESULTS

The results in the table below shows that in group A , 4 out of 5 goats aborted within 5.12 ± 1.74 days after injection and one of them suffered from dystocia. Subsequently all the aborted goats had retained fetal membranes and various degrees of uterine infection. In group B, 3 out Of 5 aborted within 4.92 ± 1.15 days, Tow of them had retained fetal membranes and uterine infection. In group C, 3 out of 5 goats aborted within 4.97 ± 1.52 days, one of them suffered from dystocia and subsequent retention of fetal membrane and uterine infection.

Table represents the effect of bromocriptine on pregnant goats at different gestation period

Groups	Duration of Pregnancy (days)	Aborted goats	Duration of Response (days) mean \pm SD	Complications		
				Dystocia	Retained placenta	Uterine infection
A	100-110	4/5 (80%) a	5.12 \pm 1.74 a	1	4 (100%)	4 (100%)
B	111-120	3/5 (60%) a	4.92 \pm 1.15 a	-	3 (100%)	3 (100%)

C	121-130	3/5 (60%) a	4.97±1.52 a	1	1 (33.3%)	1 (33.3%)
D	120-130	-	-	-	-	-

Note: all the aborted fetuses were either delivered dead or they died shortly after abortion. In group D, the 5 goats of control delivered at their due time of parturition without assistance and complications.

DISCUSSION

The results of group A in the table represents 80% abortions which is relatively but insignificantly higher than the percentage of abortion in the other two groups, it could be related to the period of gestation in which bromocriptine was administered since bromocriptine can represent some deficiency in the maturation of granulosa cells that is manifested by poor luteinization, for example inadequate development of LH or prolactin receptors (7). However the durations of response of bromocriptine in group A, B and C were close to each other (insignificant), although (8) suggested that the uterus becomes progressively more sensitive to ergot alkaloid during pregnancy. Retention of fetal membranes and subsequent uterine infection was recorded at 100% in group A and B and it was an expected sequelae since they are common complications of abortion (9). But in group C only one of the three goats which needed assistance during abortion showed retention of placenta and subsequent uterine infection, the reasonable explanation for such result is the individual variations and/or the good body or health condition of the other two aborted goats (10).

In group D the 5 goats delivered at their due time of parturition without complications, this may suggest that bromocriptine was the unique factor causing abortion in the previous groups.

استحداث الاجهاض في الماعز العراقي باستخدام البروموكربتئين

طالب موسى الحميداوي، ضياء جعفر خماس، احسان حمودي التميمي، ايناس الياسري

فرع الجراحة والولادة، كلية الطب البيطري، جامعة بغداد، بغداد، العراق.

الخلاصة

استخدم في هذا البحث 20 معزة حامل وقسمت اعتمادا على طول فترة الحمل الى أربعة مجاميع متساوية، إذ كانت فترة الحمل في المجموعة (A) 110-100 يوما وفي المجموعة (B) 120-111 يوما وفي المجموعة (C)

121-130 يوماً اعتماداً على تاريخ التسفيد. وقد حققت جميع المعزات بجرعة واحدة من البروموكربتئين 2.5 ملغم/كغم بالعضل. وقد استخدمت 5 معزات أخرى حوامل (D) 120-130 يوماً كسيطرة بعد حقنها بـ 2 ملل ماء مقطر بالعضل.

لقد أظهرت النتائج حدوث إجهاض في 80% من المجموعة A بعد 5.12 ± 1.74 يوماً من الحقن وإجهاض 60% من المجموعة B بعد 4.92 ± 1.15 يوماً من الحقن وإجهاض 60% من المجموعة C بعد 4.97 ± 1.50 يوماً من الحقن، إضافة لذلك فإن جميع المعزات المجهضة قد عانت من مضاعفات تمثلت باحتباس الأغشية الجنينية ومن ثم التهابات رحمية بالمقارنة مع مجموعة السيطرة التي لم يحدث فيها مضاعفات بعد الولادة الطبيعية.

REFERENCES

1. Morrow, D. Current therapy in theriogenology, soundens company, Philadelphia, (1980).
2. Mary J. Mycek, Richard A. Harvey and Pamelac. Champ. Lippincott's illustrated review pharmacology, 2nd edition. R. winters edition, London. (2000).
3. Waller, D. G., Renwick A.C., Hillier, K. Medical pharmacology and Therapeutics, 2nd Ed. Editor, Timothy horne, Elsevier Saunders Company, London, (2000).
4. Rang, H, Dale, M.M. Ritter J.M., Moore, P.K. Pharmacology 5th Ed. by Churchill Livingstone editor London, (2003).
5. Gobello, C., Castex, G., Corrado, Y. and Klima, L. Use of prostaglandin and bromocriptine mesylate for pregnancy termination in bitches. J.A.V.M.A., (2002), 220 (7) 1017-1019.
6. Steel, R.G.D. and Torrie, J.H. Principle and procedure of statistics. McGraw. Hall Book Companies, 2nd ed. (1980), 195-233.
7. Johnson, M.H. and Everett, B.J. Essential reproduction 3rd. ed. Blackwell Scientific Publications. London, (1988).
8. Kutzung, B.G. and Trevor, A. J. Examination and Braod review pharmacology 4th ed. by Appleton and Lange editor, (1995).
9. Ball, L. and Brand, A. In current therapy in theriogenology by Morrow, Editor W.B. Saunders company, Philadelphia, (1980).
10. Leslie J. Degroat Endocrinology (vol.1) 3rd edition. W.B. Saunders Co. Philadelphia, (1995).