

Induction of parturition in Iraqi cows by using ergometrine, dexamethasone and estrumate

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Summary

The study was conducted on 35 pregnant Iraqi cows at gestation period ranged from 260-265 days depending on their date of services. This study was performed in two regions from Baghdad province (Al-Thahab Al-Abiad and Al-Nahrawan villages) from 2009-2011, there ages ranged from 3-6 years and were divided randomly into three groups according to the type of treatment. 1st group (11 cows) were injected with 750 µg (3 ml) of estrumate intramuscular (IM) in single dose. The 2nd group (13 cows) injected with 40 mg of dexamethasone (IM) in one dose only. The 3rd group (11 cows) injected with 500µg of ergometrine (IM). The results revealed that the responsive cows were 7 (63.6%), 3 (100%) and 8 (72.7%) in the 1st, 2nd and 3rd groups respectively, and their result were recorded superior significant (P<0.01) for group 2 compared with group 1 and 3, also the results recorded significant (P<0.01) in group 2 compared with another groups (1, 3) related with duration from injection of treatment to induction of calving. Retention of fetal membranes was recorded 28.5% in all animals and the occurrence of dystocia (for many causes) was 28.6%, while the viability of calves was 89.6% (alive calves) and 10.4% of dead calves.

We concluded that using of dexamethasone, estrumate and ergometrine was safe and effective for induction of parturition in Iraqi cows

key word :Cow ,Dexamethasone,Estrumate,Ergometrine.

احداث الولادة في الابقار العراقية باستخدام الاركومترين ،الدكساميثازون والايستروميت
طالب موسى عبدالله الحميداي و احسان حمودي سعيد التميمي وايناس علي سلطان الياسري
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الخلاصة

شملت الدراسة 35 بقرة بفترة حمل تراوحت من 260-265 يوم شخصت بالاعتماد على تاريخ التسفيد وقد اجريت الدراسة في محافظة بغداد (في قريتي الذهب الابيض والنهران) للفترة من 2009-2011، تراوحت اعمار هذه الابقار بين 3-6 سنوات وقسمت عشوائيا الى ثلاثة مجاميع علاجية ، المجموعة الاولى ضمت 11 بقرة حقنت بالعضلة 750 مايكروغرام (3مل) ايستروميت وبجرعة واحدة فقط ، المجموعة الثانية ضمت 13 بقرة تم حقنها بجرعة 40 ملغم من الدكساميثازون بالعضل وبجرعه واحده ايضا ، اما المجموعة الثالثة (11 بقرة) فقد حقنت 500 مايكروغرام من الاركومترين بالعضل. اظهرت النتائج ان الابقار المستجيبة كانت 7 (63.6%) ، 13 (100%) و 8 (72.7%) في المجاميع الاولى والثانية والثالثة على التوالي ، وكانت الاستجابة تصب لصالح المجموعة الثانية وبمستوى معنوية 0.01 مقارنة مع المجموعتين الاولى والثالثة ، كما ان النتيجة كانت تصب لمصلحة المجموعة الثانية وبمستوى معنوية 0.01 مقارنة مع المجموعتين الاولى والثالثة بالنسبة لفترة الاستجابة (الفترة من حقن العلاج الى وقت حدوث الولادة). كانت نسبة عسر الولادة (لاسباب مختلفة) 28.6% ونسبة احتباس المشيمة 28.5% لجميع الحيوانات ، اما حيوية المواليد فكانت 89.6% (للمواليد الحية) و 10.4% (للمواليد الميتة).

نستنتج من ذلك ان استخدام الدكساميثازون ،الايستروميت والاركومترين كان امنا وفعالا لاحداث الولادة في الابقار العراقية.

Introduction

The timing of injection of many materials (Hormones or drugs) for parturition induction should be such that the newborn will have a normal or near normal opportunity for survival (1, 2). Many reports on the use of corticoids to induce parturition in cattle by (3 and 4).

There are many types of glucocorticoid preparations that are available which can be utilized for early induction of parturition in cattle such as dexamethasone with a minimum

dose (20 mg/animal) but in some studies a dosage of 30-40 mg given as a single injection has yield a higher rate of efficacy (5,6). There are different programs for induction included hormonal treatments i.e.estrumate ,dexamethasone and estradiol (8,9) .The ergometrine drug ,some workers pointed to the successful treatment for the curation of some cases of retention of fetal membranes (10,11) and has not been tried before to use for induction of parturition in cows ,thus we planned to investigate the effect of ergometrine and another hormones (dexamethasone and estrumate) in induction of parturition in pregnant cows and to observe their effect up on the newborns and dams .

Materials and Methods

This study was performed on 35 pregnant Iraqi cows in two regions of Baghdad province include Al-Thahab Al-Abiad and Al-Nahrawanvillages with an average of gestation period 260-265 days according to their breeding dates during the period from 2009-2011 .Their ages ranged from 3-6 years ,these cows were divided randomly into three groups ,1st group included (11 cows) injected with estrumate* 750µg (3ml)/in one dose intramuscular (IM) ,2nd group (13 cows) injected with dexamethasone** 40mg /IM in one dose also and 3rd group (11 cows) injected with ergomine (ergometrine)*** 500µg/IM in one dose .The number of responsive cows ,duration of response and nature ,type of parturition ,viability and sex of offspring as well as to their complication (retention of fetal membranes & dystocia) was recorded .Statistical analysis included Mean ,standard error ,Qi square and F-test were used and conducted according to 12.

Results

The results were reveals in table -1- represented the response to the treatment that the percentage of responsive cows were 63.6% , 100% and 72.7% on the 1st ,2nd and 3rd groups respectively ,while the duration from injection to the occurrence of parturition was 46.18±8.6 days , 38.56±6.3 days and 49.14±4.8 days in 1st ,2nd and 3rd groups respectively ,but the duration of response was shorten (P<0.01) in 2nd group comparison with 1st and 3rd groups ,the nature of parturition showed that the dystocial parturition (due to many causes) recorded 28.6% compared with normal (71.4%) in all animals in this study ,but the ratio of twinning was recorded 3.5% in all groups .Table -2- showed the viability of the calves was 89.6% (alive calves) compared with 10.4% (dead calves) .The number of the offspring after treatment was 29 calves (16 male ,13 female) .Retention of fetal membrane were 8/28 (28.5%) in the all three groups .

Table -1- showed the type of treatment, responsiveness, duration, nature and type of parturition.

groups	No. of Animals	Type of treatment	Responsive animals		Duration (hrs) M±SE	Nature of parturition		Type of parturition	
			No.	%		N	D	S	T
G1	11	Estrumate 750µg/animal3ml/I.M	7	63.6%	46.18±8.6	5	2	7	0
			a		a	71.4%	28.6%		
G2	13	Dexamethasone40mg /animalI.M	13	100%	38.56±6.3	9	4	12	1
			b		b	69.2%	30.8%		
G3	11	Ergometrine500µg /animalI.M	8	72.7%	49.14±4.8	6	2	8	0
			c		a	75%	25%		
Total	35	-----	28/35	80%	-----	20	8	27	1
						71.4%	28.6%	96.5%	3.5%

*the animals which not deliver after 3days considered out the results.

**different letters mean significantly (P<0.01).

***N=normal, D=dystocia, S=single, T=twins

Table -2- showed the viability , sex of fetuses and retention of fetal membrane

Groups	No. of animal	Responsive animal	Viability		Sex of offspring		Retention of fetal membrane
			Alive	Dead	M	F	
G1	11	7	7	0	4	3	2 28.5%
G2	13	13	12	2	8	6	4 30.7%
G3	11	8	7	1	4	4	2 25%
Total	35	28 80%	26/29 89.6%	3/29 10.4%	16/29 55.1%	13/29 44.9%	8/28 28.5%

Discussion

The results showed that the responsive cows in group 2 which injected with 40 mg of dexamethasone was recorded superior significant differences ($P<0.01$) compared with group 1 and 3 (63.6% and 72.7%) also the significant differences was recorded to group 3 compared with group 1 (6,7,13 and 14) and the similar observation have been made by (8,9 and 13). They were recorded that the overall duration between commencement of treatment to induction of calving was significantly higher ($P<0.01$) in group 1 and 3 compared with group 2 and these results were agree with 7,9 and 14 while the action of ergometrine is considered one of the ergot alkaloids that has a much more powerful action on the uterus.its mean action is the induction of sustained contraction of the uterus where uterine stimulation occurs within 5-10 minutes of intra muscular injection and continued to 48hrs sometimes and that the action may play indirect role in inducing of calving or was able to significantly increase uterine motility during late gestation (10,15),while (16) reported that the calves and saws suffered from spontaneous abortion or parturition when fed or injected with small amount of ergot (ergometrine). It was recorded that the incidence of retention of fetal membrane was 28.5% and these results were agree with (7,9 and 11).It was concluded that dexamethasone or estrumate can be used for emergency induction of parturition with lower incidence of dystocia ,retention of fetal membranes and viability of newborn ,also we success to induce calving by using ergometrine .

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