RETENTION OF FETAL MEMBRANES IN IRAQI BUFFALOES, CLINICAL &THERAPEUTICAL STUDY

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ABSTRACT

This study was conducted on 74 Iraqi buffaloes suffered from retention of fetal membranes (RFM) after 8-12 hrs in Karbala province from 2010-2011, there were ranged from 3-7 years old. The affected animals were divided into four groups randomly according to the treatment regime .1st group (18 buffaloes) treated manually ,2nd group (22buffaloes) treated with oxytocin hormone 100 IU(10ml/IM) .While the 3rd group (21 buffaloes) was treated with a single dose of estrumate 750µg (3ml /IM) .The 4th group (13 buffaloes) was treated with a single dose of estradiol benzoate (15mg/IM) and all groups were treated with a single dose of oxytetracycline 20% (20ml/IM).The response for different treatment regimes were 100% ,77% ,76.19% and 76.92% for groups respectively. The manual removal treatment gives a superior significant difference ($P<0.01$) from other hormonal treatments and the second group recorded a better percentage of drops of fetal membranes compared with the 3rd and 4th group. The manually treated animals were superior to other group related to first postpartum estrus, the number of services per conception and the days open measurements.

We concluded that the manual treatment still an important method of treatment, this fact depends on the reproductive parameters. Also we concluded that the hormonal treatment is a good method and gives appositive result reaches to 80% response.

INTRODUCTION

Buffalo is one of the most important animal to many farmers in Iraq for its productivity of high fat content milk, meat, hide, manure and even as a draft power and transportation. They call it the" black gold". Buffalo is considered a low reproductive efficiency animal as it achieves long calving intervals(1).Retention of fetal membranes is one of the most common conditions occurring in animals after parturition. It is observed mainly in cows and buffaloes only (2). The main causes of RFM are nutritional, physiological, mechanical and pathological (3, 4).The prognosis indicated that mortality rate should not

exceed 1-2%in uncomplicated cases (5). The effect of RFM includes delay ovulation, endomertritis and increase number of inseminations and the open days (6, 7).Different methods of treatment is applied to include manual removal and hormonal (6, 8).The aims of study were to evaluate different treatments upon retention of fetal membranes and the reproductive efficiency criteria for the treated animals were number of response animals, services per conception and days open.

MATERIAL &METHOD

The study was conducted on 74 cow buffaloes between 3-7years old in Karbala province ,these animals suffered from retention of fetal membranes (RFM) after 12hrs, during the period from 2010-2011.These animals were divided randomly into four groups ,1st group included 18 buffaloes treated by manual removal according to (3,7) after 24hrs post partum ,2nd group (22 buffaloes) treated with oxytocin*[1] 100IU /IM of single dose after 24hrs post partum ,3rd group (21 buffaloes) treated with single dose of estrumate*[2] 750µg /IM after 24hrs post partum and 4th group included 13cow buffaloes treated with estradiol benzoate*[3] 15mg /IM in a single dose after 24hrs post partum. All animals of each group have been injected with 4gm in a single dose of 20% oxytetracycline*4 (20ml) directly after treatment. Response of animals and duration from treatment till the expulsion of fetal membranes was recorded. As well as we recorded the first postpartum, number of services per conception and days open. Statistical analysis include mean, standard error, Chi-square and F-test were used and conducted according to (9).

RESULTS

The result were shown in table -1- represented the type of treatment and response to the treatment that the percentage of respondents buffaloes were 100%, 77.27%, 76.19% and 76.92% in the 1st, 2nd, 3rd and 4th groups respectively, while the duration of treatment till the fetal membranes expulsion was directly, 2.36±0.25days, 4.34±0.81days and 3.96±0.3days in the 1st, 2nd, 3rd and 4th groups respectively. Table -2- showed the first postpartum estrus, number of services per conception and days open. We recorded significant differences ($P<0.01$) in reproductive parameters in first post partum estrus in 1st group compared with 2nd, 3rd and 4th groups but no significant differences in the number of services per conception between groups. While the days open was recorded significant differences ($P<0.01$) between 1st group superior than the other groups.

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[1]*Intertocin® vial contains 100ml /each ml contain 10IU oxytocin /intervet – Holland.

[2]*Estrumate® synthetic prostaglandin /Schering Plough Animal Health – Germany.

[3]*Estradiol benzoate vial 10ml /each ml contain 5mg /Intervet – Holland.

4*Remacycline L.A.® vial 100ml /each ml contain 20 gm oxytetracycline /COOPH VET–cedex –France.

Table-1- showed Different methods of treatment, response, and duration of response in Iraqi buffaloes.

Group	No. of animals	Type of treatment	Animal response No. %	Duration Days M±SE
G1	18	**Manual removal**	18 100% (a)	---------
G2	22	**Oxytocin 100 I.U/I.M**	17 77.27% (b)	2.36 ±0.25 (a)
G3	21	**Estrumate 750µg/ I.M**	16 76.19% (b)	4.34 ±0.81(b)
G4	13	**Estradiol Benzoate 15mg/I.M**	10 76.92% (b)	3.96±0.31(b)
Total	74	----------	61 82.43%	----------

****different letter means sig (P<0.01).**

Table-2- First postpartum estrus, Number of services per-conception and days open in Iraqi buffaloes

Type of Treatment	No. of animals	First postpartum estrus (Days) M ±SE	No. of services per conception M±SE	Days open (Days) M±SE
G1 Manual removal	11	104.53±6.14 (a)	2.01 ±0.2 (a)	152.26±7.32(a)
G2 oxytocin	12	122.41±7.32 (b)	1.88±0.14 (a)	169.22±8.58 (b)
G3 estrumate	10	113.56±6.52 (C)	1.93±0.10 (a)	161.56±6.69 (b)
G4 Estradiol	8	118.34±5.46 (b)	1.79±0.17 (a)	164.23±7.36(b)

Different letters mean sig. P< 0.01

DISCUSSION

The results in table -1- showed that the 1st group (manual removal) was best and recorded highly significantly (P<0.01) related with No. of responsive animal and duration from treatment till the expulsion of fetal membranes compared with 2nd, 3rd and 4th groups and these results were in agreement with 10 and 11. While the result was 82.43% in all groups and these findings reported by (10, 12, 13).

The first post partum estrus interval in all groups (G1, G2, G3 and G4) of buffaloes were present in table -2- which showed a significant difference between the groups but the 1st group was significantly superior (P<0.01) to all other groups and the findings were in agreement with those reported by (10, 14, 15). The number of services per conception in all groups showed no significant differences between them and these findings were according to (10, 16, and 17). The days open was indicated that the treatment regime include manual removal were applied significantly superior than all other treatment groups and these results reported by (10, 14, 16).

We concluded that the manual removal still an important method and gives a good result through the return of animals to their normal reproductive cycle, the number of services per conception and the number of days open compared with hormonal treatment.

احتباس الاغشيه الجنينيه في الجاموس العراقي دراسه سريريه وعلاجيه

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الخلاصه

تم اجراء هذه الدراسه على 74 جاموسه عراقيه تعاني من احتباس الاغشيه الجنينيه بعد فتره من 8 الى 12 ساعه من الولاده في محافظه كربلاء للفتره من 2010- 2011 ، تراوحت اعمارها من 3-7 سنوات . وقد قسمت هذه الحيوانات الى اربعه مجاميع طبقا للبرنامج العلاجي المستخدم . ضمت المجموعة الاولى 18 جاموسه وقد عولجت بالازاله اليدويه فيما كان عدد حيوانات المجموعه الثانيه 22 جاموسه وتم علاجها بحقن 100 وحده دوليه من هرمون الاوكسيتوسين في العضله وبجرعه واحده فقط ، بينما ضمت المجموعه الثالثه 21 جاموسه وقد عولجت بجرعه واحده من الاسترواميت بمقدار 750 مايكوغرام في الغضله ايضا واخيرا فان المجموعه الرابعه والتي ضمت 13 جاموسه عولجت بهرمون الاسترادايول وبمقدار 15 ملغم في العضله وبجرعه واحده فقط ، كما تم حقن جميع حيوانات التجربه بماده الاوكسيتتراسايكلين 20% وبجرعه مقدارها 4 غرام لكل حيوان (20 مل / في العضله) مباشره بعد التداخل العلاجي . سجلت الاستجابه للانظمه العلاجيه المختلفه 100%، 77.27%، 76.19% و 76.92% للمجاميع الاربعه على التوالي وقد اعطت طريقه الازاله اليدويه افضليه بمستوى معنويه 0.01 مقارنه بالمجاميع الاخرى . اما ما يخص الفتره اللازمه لسقوط الاغشيه الجنينيه بعد المعالجه فقد كانت الازاله اليدويه لها الافضليه كونها كانت تتم مباشره بعد التدخل اما المجاميع الاخرى فقد اظهرت المجموعه الثانيه افضليه عما عليه في المجموعتين الثالثه والرابعه . فيما يتعلق بالشبق الاول بعد الولاده والتلقيحات اللازمه للحمل فقد كانت المجموعه

الاولى لها افضليه على المجاميع الاخرى وهناك افضليه للمجموعه الثالثه عما عليه للمجموعه الثانيه والرابعه ، اما ما يخص عدد التلقيحات اللازمه للحمل فلم تسجل افضليه لاي من المجاميع على الاخرى . واخيرا فان معيار الايام المفتوحه اعطى افضليه معنويه لصالح المجموعه الاولى عن باقي المجاميع الاخرى والتي لم يظهر فرق معنوي فيما بينها .

نستنتج من ذلك ان الازاله اليدويه تعتبر طريقه مهمه لعلاج حالات احتباس الاغشيه الجنينيه في الجاموس لحد الان من خلال اعتمادنا على الكثير من المقاييس التناسليه والتي تم متابعتها خلال الدراسه ، كما يمكن الاستنتاج بان العلاجات الهرمونيه اعطت نتائج ايجابيه في حالات احتباس المشيمه ايضا .

REFERENCES

1. El-Rigalaty, H.A. (1995). Effect of seasonality and milk productivity on the reproductive performance of Egyptian buffaloes from parturition to conception. Thesis M. SC. Faculty of Agric. Cairo Univ.
2. Laven, R.A. and Peters, A.R. (1996). Bovine retained placenta. Etiology, pathogenesis and economic loss. Vet Rec. 139: 465-471.
3. Arthur, G.H.; Noakes, D.E. and Person, H. (2008). Veterinary reproduction and obstetrics. 8th ed. Saunders an imprint of Elsevier, London. P 226-236.
4. Abd-Elnaeim, M.M.; Miglino, M.A.; Pfarrer, C. and Leiser, R. (2003). Micro vascular architecture of the fetal cotyledons in water buffaloes (Bubalus bubalis) during different stages of pregnancy, Ann Anat 185, pp.325-334.
5. Wooding, F.B.P. (1992). Current topic: the synepitheliochorial placenta of ruminants: binucleate cell fusion and hormone production. Placenta 13, pp. 101-113.
6. Roberts, S.J. (1986). Veterinary Obstetrics and Genital Diseases. 373-393.
7. Robert, S.Y. and Walter, R.T. (2007).Current therapy in large animal Theriogenology -2- (2nd) ed. Saunders – Elsevier. P 412-425.
8. El-Malky, (2007). Factors affecting on retained placenta in buffaloes. Ph.D. thesis Fac. Of Agric. Menufeia Univ., Egypt.
9. Steel, R.G.D. and Torrie, H.J. (1981). Principles and procedures of statistics. 2nd Edition, McGraw Hill, London.
10. Channa, A.A.; Kunbhar, H.K.; Samo, M.U.; Mirbahar, K.B. and Kaka, I. (2006). Treatment of retention of placenta and its effect on subsequent fertility rate in buffaloes. Pak. J. Agri., Agril. Engg. , Vet. Sc. 22(1) 180-184.
11. Hanafi, E. M.; Ahmed, W. M.; El- Khadrawy, H. H. and Zabaal, M. M. (2011).An Overview on Placental Retention in Farm Animals. Middle-East Journal of Scientific Research 7 (5): 643-651, 2011.
12. Beagley, J. C.; Whitman, K. J.; Baptiste, K. E. and Scherzer, J. (2010). Physiology and Treatment of Retained Fetal Membranes in Cattle. J Vet Intern Med 2010; 24:261–268.

13. Eiler, H. and Fecteau, K. A. (2007). Retained placenta. In: Youngquist, R.S. and Threlfall, W.R. eds. Current Therapy in Large Animal Theriogenology, 2nd ed. St Louis, MO: WB Saunders; 345–354.
14. Kalhoro, H. R. (2001). Incidence of retention of placenta and its effect on subsequent fertility in buffalo, M.Sc. thesis. Department of animal reproduction, S.A.U.Tandojam.
15. Ahmed, W. M.; Abdel Hameed, A. R.; El- Khadrawy, H. H. and Hanafi, E. M. (2009). Investigations on Retained Placenta in Egyptian Buffaloes. Global Veterinaria, 3: 120-124.
16. Agarwal, S. K.; Singh, S. K. and Rajkumar, R. (2005). Reproductive disorders and their management in cattle and buffaloes: A Review. Indian J. Anim. Sci.; 75 (7): 858-873.
17. Abdulhameed, A. R.; Ahmed, K. I. and El- Khadrawy, H. H. (2009). Strategy trail of Retention of fetal membranes in Friezian Herd in Eygpt. Global Veterinaria 3(1):63-68.