Some Protocol Treatments for Retained Placenta in local Iraqi Buffalo (*Bubalus bubalis)*

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Abstract

The study aimed to evaluate different protocol treatments efficiency on fetal membranes retention in local Iraqi buffaloes breed (*Bubalus bubalis)* and some reproductive efficiency criteria for the treated animals under field condition. A study was conducted on 80 local buffalo cows breed *(Bubalus bubalis)* in the south of Baghdad suffered from retained placenta after parturition or abortion, they treated with different protocols (PGF2α+Ut.Pes+Placenta removed manually, PGF2α+ GnRH +ut.Pes+Placenta removed manually+systemic antibiotics + mineral inj, PGF2α+ systemic antibiotics and PGF2α), according to healthy status (if there was any complications or hypocalcaemia or magnecimia injuries and others). Results revealed that the mean duration days treatment were (3.25, 2.5, 3.5, 4.2), mean duration days open were (99.5, 73.3, 106.5, 109.0) and the pregnant percentages were (80.0, 90.0, 70.0, 60.0)%, respectively for the four groups (G1,G2,G3 and G4). We concluded that treatment with PGF2α+ GnRH+Ut.Pes+Placenta manually removed + systemic antibiotics+meniral inj, was the highly effective for buffalo retention fetal membranes at ($P \leq 0.05$) and PGF2α+ GnRH hormones preferred to be given after delivery.

Key words: Treatment, retained placenta, Iraqi buffaloes.
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بعض البرامج العلاجية المستخدمة لمعالجة احتباس الأغشية الجنينية في الجاموس العراقي المحلي*(Bubalus bubalis)*

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الخلاصة

هدفت الدراسة إلى تقييم كفاءة بعض البرامج العلاجية المستخدمة لمعالجة مشكلة احتباس الأغشية الجنينية في الجاموس العراقي المحلي جنوبي بغداد من خلال تأثيرها بكفاءتها التناسلية. أجريت الدراسة الحالية على 80 أنثى جاموس عراقية محلية في مناطق جنوب بغداد كانت تعاني من احتباس الأغشية الجنينية بعد الولادة أو بعد الإجهاض. استخدمت لها بعض البرامج العلاجية المختلفة اعتمادا على حالتها الصحية هي (PGF2α+Ut.Pes+Placenta removed manually, PGF2α+ GnRH +ut.Pes+Placenta removed manually +systemic antibiotics + mineral inj, PGF2α+ systemic antibioticsand PGF2α). أظهرت نتائج الدراسة التي أجريت على مجاميع حيوانات التجربة الأربعة (م1, م2 وم3 و م4) أن استخدام المعالجة الهرمونية (بهرموني البروستاكلاندين ومحرض القند) مع الإزالة اليدوية للأغشية الجنينية واستخدام المضادات الحياتية الجسمانية العامة والموضعية (تحاميل رحميه تحوي هرمون الاسترادايول) أعطت نتائج معنوية وعلى مستوى (أ ≤0.05), وكان معدل الأيام المفتوحة (99.5, 73.3, 106.5 و109.0) ومعدل أيام المعالجة (3.25, 2.5, 3.5 و4.25) ونسبة الحمل (80, 90, 70 و60)% على التوالي. نستنتج أن هرموني

البروستاكلاندين ومحرض القند والإزالة اليدوية للأغشية الجنينية ذات كفاءة علاجية عالية وبمستوى (أ ≤0.05) ولذا ننصح باستخدام المعالجة الهرمونية خصوصا هرموني البروستاكلاندين ومحرض القند مابعد الولادة.

الكلمات مفتاحية: معالجة, احتباس الأغشية الجنينية, الجاموس العراقي.

Introduction

Buffalo is one of the most important animal to many farmers in Iraq for its productivity of high fat content milk, meat, and other products. In the south of Baghdad large number of small commercial herds 3-150 animals of buffaloes are maintained, most of these animals belong to (*Bubalus bubalis*) breed which named popularly (Furaty or Babylon Buffaloes), milk of these animals was supplied directly or collected by middlemen and supplied to towns and cities in Baghdad (A personal note). Buffalo is considered a low reproductive efficiency animal as it achieves long calving intervals(1). Retention of fetal membranes (RFM) is one of the most common conditions occurring in animals after parturition, It is observed mainly in cattle and buffaloes (2). RFM is one of the major pathological problems faced by the farmers and field veterinarians in practice, and to maintain a calving interval of 13-14 months in buffaloes, successful breeding must take place within 85-115 days after calving (3). Disturbances during this period due to delay of uterine involution or resumption of estrous activity are likely to prolong the calving interval and reduce the lifetime reproductive and productive efficiency (4). RFM is one of the common diseases after delivery in buffaloes in this region of Baghdad which reached 4.66% from all reproductive disorders which reached 59.0% (5). The main causes of RFM are nutritional, physiological, mechanical, pathological, (6, 7), and immunologically that is one theory suggests the fetal placenta must be recognized as "foreign" tissue and rejected by the immune system after parturition to cause expulsion of the placenta (8). The prognosis indicated that mortality rate not exceed 1-2% in uncomplicated cases (9). Different methods of treatments to RFM were be applied to include manual removal and hormonal programs accompanied with antibiotics (10, 11). The aims of study were to evaluate different treatment protocols upon retention of fetal membranes and the reproductive efficiency for the treated animals, number of animals responded, days open and duration days for treatment till the animal recovered.

Material and Methods

The study was conducted on 80 local buffalo cows (*Bubalus bubalis*) aged 3-8 years in south of Baghdad, where farming system is semi-intensive and the animals are fed with concentrate, wheat husk, cotton seeds and seasonal green fodders (maize, alfalfa and other green grass), these animals suffered from RFM after 24hrs from delivery (naturally or aborted), during the period from 2011-2012. Animals divided into four groups according to healthy status, 1st group (G1) included 20 buffalo cows treated by PGF2α (Estrumate, Schering Plough Animal Health-Germany) 750µg (I\M)). plus (Ut.Pes) Uterine Pesory (contain Oxytetracycline plus estradiol hormone) plus Placenta removed manually (Pl .Rem.). 2nd group (G2) included 40 buffalo cows treated with Estrumate 2 ml.plus GnRH (Receptal) 5ml plus Ut.Pes. plus Pl.rem plus antibiotics (20% Oxytetracycline 1ml\10kg.B.W.) plus mineral inj. (calcium plus phosphorus), 3rd group (G3) (10) treated with Estrumate 2ml plus systemic antibiotics and the 4th group (G4) included (10) cows buffaloes treated with PGF2α alone. Responses of animals and duration from treatment till the animals be recovered was recorded. As well as we recorded the first postpartum estrus (days open). The manual removal as reviewed by (12). Cows showed estrus were naturally inseminated from an experienced fertile bulls and examined for pregnancy detection after 2 months rectally. Statistical analysis included mean, st.de. and st.er and the significances tests were done according to (13) by using (14). Results were considered significant at ($P<0.05$) or less.

Results and Discussion

Table (1) Show types of treatment groups programs and MDT, MDO and pregnant cows percentages

Group	1	2	3	4
Protocol treatment	PGF2α+Ut.Pes+Placenta manual remove	PGF2α+ GnRH +ut.Pes+Placenta manual remove +systemic antibiotics+meniral inj	PGF2α+ systemic antibiotics	PGF2α
No. cows treated	20	40	10	10
Mean duration days treat.	3.25 b	2.5a	3.5b	4.2c
Mean duration days open	99.5b	73.3a	106.5c	109.0 c
St.De.	3.88	3.1	4.18	4.28
St.Er.	1.97	1.8	2.1	2.04
% of cows pregnant	80.0% b (16/20)	90.0% a (36/40)	70% c (7/10)	60% c (6/10)

Values with different superscripts in the same row differ significantly (P<0.05).

Table (1) shows a significant results at (P<0.05) when hormones and antibiotics used and this may be due to deficiency in secretions of PGF2 and serum Ca concentration, which maintain adequate contraction of the uterus, that cause RFM, when increase the risk of dystocia and delay the involution of the uterus (15, 16), or may be due to an imbalance in the synthesis of PGF2α and PGI2 during the first 60 minutes postpartum conducting to a lack of PGF2α and that the relative increase in PGI2 is associated with placental retention in bovine(17). Researchers (18, 19) obtained that treatment with antibiotics were so useful due to uterine bacterial infections during the postpartum period which associated with lower conception rates, increased intervals from calving to first service or conception and more animals culled for failure to conceive. Also infection of uterus invariably causes damage to the endometrial epithelium; thus, the uterus becomes unable to secrete luteolytic pattern of PGF2α, and hence the corpus luteum is retained and self perpetuating infection results (20). While 21 showed that treatment with GnRH or $PGF_{2}\alpha$ helps the normalization of electrolytes and vitamins, as well early treatment of abnormal cows with GnRH improves the reproductive efficiency through normalization of serum progesterone. The reproductive performance of treated buffalos with GnRH improved as was shown by the significant (P<0.01) decrease in days to first service, days open and calving interval, so GnRH treatment had relatively ameliorated the metabolic function in treated buffaloes via increasing concentrations of blood total protein, glucose, creatine, creatinine, calcium and inorganic phosphorus (22). Intrauterine infusion of Rifampicin and systemic administration of Oxytetracycline positively affected the clinical cure and uterine involution of buffaloes with toxic puerperal metritis in local Iraqi buffalo (23). Also (24) showed that serum progesterone concentration was significantly higher (P<0.05) in buffaloes with RFM compared to buffaloes without RFM, and mean serum estradiol-17-β level in buffaloes with RFM was significantly lower (P<0.05), so that treatment of RFM with estradiol is preferred. Combined GnRH and PGF2alpha application in cows with endometritis puerperalis treated with antibiotics, clinical recovery was 96.6% in the experimental groups and 82.5% in the control group (p<0.05), first service pregnancy rate was significantly better in hormone treated than control cows 51.7 versus 36.4% (p<0.05), total pregnancy rate and insemination index values were not significantly improved following GnRH and PGF2alpha treatment. The average service

period was 89.8 +/- 21.2 days in cows after hormone treatment, and 112.6 +/- 24.5 days in control cows, the difference were significant ($p<0.05$), these results indicate that the sequential GnRH and PGF2alpha application in cows with puerperal endometritis positively affected ovarian function and uterine involution in Kundhi buffaloes (25). It has been proved that treatment with PGF2 alpha or its analogue in early postpartum cows and buffaloes in reproduction order to hasten early resumption of cyclic ovarian Information activity and thereby to increase the reproduction (25, 26). The study was agreement with (27), treatment with GnRH plus PGF2α increased significantly ($P<0.05$) and accelerate the process of uterine involution postpartum, reduce the time period of first postpartum estrus and induce early expulsion of fetal membrane in Kundhi buffalo. Also agree with (28) that the hormonal treatment is a good method and gives appositive reproductive result reaches to 80% response in Iraqi buffaloes. Our conclusions that Iraqi local buffaloes suffered from bad management especially ration imbalance which lead to hormonal disturbance. We recommended hormonal treatment especially PGF2α+ GnRH hormones accompanied with manual removal to retained placenta and control incorrect managements especially feed imbalance.

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