Post Partum Pyometra In Iraqi Buffaloes : Clinical and Therapeutical Study

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Summary

The study was conducted on 118 buffaloes suffering from opened pyometra 20-30 days post partum in AL-thahab AL-abiadh village west of Baghdad Province, their ages ranged from 3-6 years. They were divided randomly in to 4 groups. Group one included (27 buffalo) treated with 15 mg of PGF$_2$$\alpha$ (Prosolven)$^R$ IM, The 2$^{nd}$ group (32 buffalo) treated with 15 mg of PGF$_2$$\alpha$ and 15 mg estradiol benzoate IM . The 3$^{rd}$ group (29 buffalo) treated with 15 mg of PGF$_2$$\alpha$ and 50. 100 ml of lugol’s iodine 0.5 % intra-uterine.

The 4$^{th}$ group (30 buffalo) treated with 15 mg of PGF$_2$$\alpha$ and 4 gm of Oxytetracycline 20% (20 ml of Oxy. plus 50-100 ml disilled water) intra-uterine.

Results showed that the 1$^{st}$ and 2$^{nd}$ response in 4 treated groups were 66.2%, 84.3%, 79.3% and 86.6% respectively .The response was high in the 2$^{nd}$ and 4$^{th}$ group (P < 0.01). These responses represent also the conception rate for these 4 treated groups. The means ± SE of days open for above groups were 98.4± 6.4 , 84.2 ± 4.4 , 97.3 ± 3.8 and 82.7 ± 4.6 respectively ,the second and fourth group were significant (P < 0.01).

The number of newly born calves was 94 calves (46 male,48 female) The alive were 87(92.6%) and dead 7 (7.4%), so we conclude that the PGF$_2$$\alpha$ has an effective role in the treatment of pyometra in buffalo and it’s effect increasing when it combined with oxytetracycline 20% and estradiol benzoate together .
تقح الرحم بعد الولادة في الجاموس العراقي: دراسة سريرية وعلاجية

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الخلاصة

اجرتم الدراسة علي 118 جاموسا كانت تعاني من تقح الرحم المفتوح وخلال 20-30 يوما بعد الولادة. في قرية الذهاب الأبيض إلى الغرب من محافظة بغداد ومرت اطرافها بين 3-6 سنوات. قسمت هذه الحيوانات عشوائياً إلى اربعة مجموعات. حققت المجموعة الأولى (27) جاموسا في العضل بجرعة 15 ملغ من البروستاكلاندينات من نوع الفا (Prosolven)R PGFα2α (32) جاموسا عولجت بـ 15 ملغ من PGF2αα. المجموعة الثالثة (29) جاموسا حققت بـ 0.5 ملغ من PGF2αα إضافة إلى حقن داخل الرحم بمحلول اليوود المخفف. المجموعة الرابعة تمت معالجتها بـ 15 ملغ من PGF2αα إضافة إلى الحقن داخل الرحم بـ 4 غرام من الأوكسي تتراسكليمين 20% (20 ملغ من المضادات الحياتية + 100 ملغ من الماء المقطر). أظهرت هذه المعالجات الأربعة نسبة استجابية بلغت 66.2%, 84.3%, 79.3% و 86.6% على التوالي و لصالح المجموعة الثانية و المجموعة الرابعة وبأهمية إحصائية (P < 0.01). و قد مثلت هذه الاستجابات نسبة الحمل في هذه المجموعات. بلغ عدد الأجول المفتوحة (المعدل ± معامل الخطأ القياسي) لهذه الحيوانات 98.4 ± 6.4 , 97.3 ± 4.4 , 84.2 ± 4.4 , 82.7 ± 3.8 نسبة استجابة 66.0%, 14.0%, 22.0%, 16.6% للوالح المجموعات الأولية والثانية والإديكواربية. P < 0.01

بلغ عدد الأجول المولودة 94 عجلاً (46 ذكر, 48 أنثى) و كان عدد العجول الحية 87 عجلاً و بنسبة (92.6%) و أما عدد العجول الميتة فكان 7 و بنسبة (7.4%) . نستنتج من البحث بأن البروستاكلاندينات من نوع PGF2α دوراً مؤثراً في علاج تقح الرحم في الجاموس و يزداد هذا التأثير إذا ما أعطى مع الأوكسي تتراسكليمين 20% و هرمون الإستراديول بنزويت سوية .
Introduction

Buffaloes play an important role in farmer’s economy as a source of milk, meat and skin (1). Pyometra is an infectious uterine disorder and mostly occurs post partum in buffaloes. It’s characterized by the accumulation of purulent exudate in the uterus and by persistence corpus luteum with failure of estrus due to suppression of uterine luteolytic factor (PGF$_2\alpha$) secondary to the severe endometritis (2). The incidence of buffalo pyometra was 0.58 – 6.3% (3,4).

Pyometra in buffaloes often followed an acute endometritis due to difficult calving and usually associated with the retention of the fetal membranes (5). Many treatment had been used in cattle and buffaloes (5,6,7).

This study presents the postpartum pyometra in Iraqi buffaloes and to investigate the various treatments upon pyometra.

Materials and Methods

The study was conducted in AL-thahab AL-abiadh village, west of Baghdad province, on 118 Buffalo, their ages range from 3 – 6 years. The duration of the study was performed from 2001 – 2004. All buffalo were kept in the same environmental and hygienic conditions and subjected to the same management.

Cases of pyometra were diagnosed carefully by external examination with rectal palpation. The animals were divided randomly into 4 groups. These groups were 27, 32, 29 and 30 buffalo represented first, second, third and fourth group respectively.

The division of the animals in to 4 groups was done according to the type of used treatment. The 1st group (27 buffalo) was treated with PGF$_2\alpha$ (prosolven) 15 mg intramuscular (IM) 20 – 30 days post partum, the animals were followed for 3 weeks and the unresponsive completely animals were retreated. The unresponsive animals for two successive treatments were excluded from the study. The second group (32 buffalo) was treated with PGF$_2\alpha$ 15 mg and estradoil benzoate 15 mg IM at the same time and the retreatment of unresponsive animals as in the 1st group was done. The third group (29 buffalo) was treated with PGF$_2\alpha$ 15 mg plus lugol’s iodine solution (0.5 %) 50 – 100 ml intra uterine and according to the size of the uterus. Retreatment of unresponsive animals as in the previous two groups. The fourth group (30 buffalo) was treated with PGF$_2\alpha$ 15 mg IM and infusion of 4 gm from oxytetracycline 20% intra-uterine.
The reproductive efficiency criterion for the treated animals were included the following, services per conception, days open, type of birth, sex and viability of new born calves were recorded (8).

1- Services per conception = \[
\frac{\text{NO. Services in all}}{\text{Total conception}}
\]

2- Days open = \[
\frac{\text{Days calving to}}{\text{Total cows}}
\]

T test and chi square was conducted for analyzing the data (9).

Results

The results were represented in table (1) and table (2). Table 1 reveals that the response to the treatment with PGF$_2 \alpha$ (prosolven) 15 mg IM. Was effective in the all four groups and the percentage of response range from 40-63% in the first trial of treatment.

The combination of PGF$_2 \alpha$ and other treatment was also effective in post partum pyometra in all treated buffaleos, the percentage responsive animals was 66-86%.

Best results were achieved when PGF$_2 \alpha$ and estradiol benzoate (15mg) or PGF$_2 \alpha$ and 4 gm of oxytetracycline 20% intrauterine infusion were administrated to the second and fourth group (84-86%) in comparison (66–79%) in the first and third group.

Table 2 reveals that the number of services per conception was (2.2 ± 0.8), (2.3 ± 1.1) in the second and fourth group while it was (3.1 ± 1.1), (3.4 ±1.3) in the 1st and 3rd groups.

The days open were less in 2nd and 4th groups (82.7 ± 4.6), (84.2 ± 4.4) in comparison in 1st and 3rd group (98.4 ± 6.4), (97.3 ± 3.8).

The number of newly born calves was 94 calves (46 male, 48 female) out of 118 treated buffalo.

The alive calves were 87 (92.6 %) and dead calves were 7 (7.4 %) from the total born calves.
Table 1: Reveals the type of treatment and degree of response in postpartum pyometra in buffaloes.

<table>
<thead>
<tr>
<th>Groups</th>
<th>No. of treated animals</th>
<th>Type of treatment</th>
<th>First response</th>
<th>Second response</th>
<th>Total response for all treated buffaloes (conception rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>1</td>
<td>27</td>
<td>Prosolven 15 mg</td>
<td>11</td>
<td>40.7</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>32</td>
<td>Prosolven 15 mg + estradiol benzoate 15 mg</td>
<td>19</td>
<td>59.3</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>Prosolven 15 mg + Lugol’s Iodine</td>
<td>17</td>
<td>58.6</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>Prosolven 15 mg + 4 gm oxytetracycline 20%</td>
<td>19</td>
<td>63.3</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td></td>
<td>66</td>
<td>55.9</td>
<td>28</td>
</tr>
</tbody>
</table>

Similar letters not significant, Different letters significant, P < 0.01

Table 2: Reveals the effect of treatment on reproductive efficiency criteria for fertility, sex and viability of new born calves with mean ± SE

<table>
<thead>
<tr>
<th>Groups</th>
<th>No. of treated animals</th>
<th>No. of conceived animals</th>
<th>Services per conception</th>
<th>Days open</th>
<th>Sex of born calves</th>
<th>Viability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1</td>
<td>27</td>
<td>18</td>
<td>3.1 ± 1.1</td>
<td>98.4 ± 6.4 a *</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>32</td>
<td>27</td>
<td>2.2 ± 0.8</td>
<td>84.2 ± 4.4 b**</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>23</td>
<td>3.4 ± 1.3</td>
<td>97.3 ± 3.8 a *</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>26</td>
<td>2.3 ± 1.6</td>
<td>82.7 ± 4.6 b**</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>94</td>
<td>-</td>
<td>-</td>
<td>46</td>
<td>48</td>
</tr>
</tbody>
</table>

Viability: 48.9%, 51.1%, 92.6%, 7.4%
Discussion

The all over response was (84.3 and 86.6%) in the 2\textsuperscript{nd} and 4\textsuperscript{th} group. This response seems to be to the role of estrogens in evacuating the uterine contents by increasing the uterine blood supply and increasing the uterine muscles contraction in the 2\textsuperscript{nd} group in addition to the effect of PGF2\textalpha\ (10) and to the effect of oxytetracycline and its maintenance therapeutic levels in the uterine lumen for 36 hours more than other antibiotics in the 4\textsuperscript{th} group (11).

The conception rate (66.6%) in the first group (table1). Was in agreement with (6) who reported 65% conception rate in cows treated from pyometra with various dose of PGF\textsubscript{2}\alpha. The conception rate in third group was high (79.3%) more than 1\textsuperscript{st} group. This result may be related to the lugol’s iodine solution by releasing PGF\textsubscript{2}a from the uterine endometrium and in consequence stimulation muscles contraction and tone (10) beside its combination with PGF\textsubscript{2}a (12). The conception rate (84.3%) and days open (84.2%) in the 2\textsuperscript{nd} group were comparable in pyometric cows treated with estradiol cypionate and PGF\textsubscript{2}a (13). So the combination of PGF\textsubscript{2}a and estradiol benzoate was effective in reducing days open and increasing conception rate in this group.

The best results were seen in the 4\textsuperscript{th} group, conception rate (86.6%) and days open (82.7) by using PGF\textsubscript{2}a and oxytetracycline 20% otherwise (12), recorded days open 102 and services per conception 3.4 in postpartum bovine pyometra treated with PGF\textsubscript{2}a and oxytetracycline 20%.

We concluded that the PGF\textsubscript{2}a and its combination with estradiol benzoate and 4 gm of oxytetracycline 20% intrauterine infusion was effective in the treatment of postpartum pyometra in buffaloes and this may be related to the role of PGF\textsubscript{2}a and estradiol benzoate in increasing the uterine contraction with rapid evacuation of its contents and reducing uterine infection with oxytetracycline 20%.

References


