EFFECTS OF ALPASTROL AND LUPROTEST, ON THE OESTRUS SYNCHRONIZATION RESPONSES IN BLACK BENGAL GOATS

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ABSTRACT

Eight and Black Bengal goat females were synchronized in 2 groups with Alpasterol ( Gabbrotest®; VETMED, Italy) or Luprotest (Prostovin®, Intervet, Netherlands) at 2 mg and 7.5 mg equivalents to 1 ml / dose respectively during the period from January 2002 to June 2003. The 2 groups were given at 11 days interval. The percent of animals responding following 1st injection of Alpasterol and Luprotest was 78% and 85.5%, respectively. However, all animals responded following 2nd injection of Alpasterol, while that of Luprotest was 87.5%. The mean time of onset of oestrus and duration of oestrus in Alpasterol group were 92.1 ± 7.91 h and 37.37 ± 6.69 h and 20.4 ± 4.8 h and 28.5 ± 6.3 h following 1st and 2nd injections, respectively. The similar parameters were 37.5 ± 8.2 h and 49.5 ± 6.6 h and 21 ± 4.6 h and 27.1 ± 7.7 h in Luprotest group. In both groups there was no significant difference (p > 0.05) between the means groups on either the time of onset of oestrus or the duration of oestrus.

Key words: Alpasterol, luprotest, oestrus, synchronization, Black Bengal goats

INTRODUCTION

Interest in the synchronization of oestrus of goats has increased in recent years largely because of its successful use in goats breeding programme. Oestrous synchronisation in the goat is a valuable reproductive technique for controlled breeding and facilitating artificial insemination (AI). It is a consequent part of embryo transfer technology (Krammer, 1988). Oestrus synchronisation in goats can be achieved by controlling the luteal phase of the oestrous cycle either by the use of progestagens (Corteel, 1973) or progesterlandin F2α (Pereira et al., 1978). Progesterlandin F2α (PCGf2a) and its analogue have been found to be more efficiently used to synchronizing oestrus in goats during natural breeding (Pereira et al., 1978). The objectives of this study is to observe the effects of Alpasterol (Gabbrotest®; VETMED, Italy) and Luprotest (Prostovin®, Intervet, Netherlands) on synchronization of oestrus in Black Bengal goats in respect of the mean time of onset and duration of oestrus.

MATERIALS AND METHODS

The effects of Alpasterol and Luprotest on synchronization of oestrus were studied on randomly selected 16 adult Black Bengal goats during the period from January, 2002 to June 2003. Three 16 goats were randomly divided into two groups (A and B), each consisting of 8 goats. Each 8 group of A was injected with Alpasterol @ 1 ml (2 mg) 2nd group B with Luprotest @ 1 ml (7.5 mg) with 2 injections at 11 days intervals. The first injection was given irrespective of stage of the oestrous cycle. Each of the animals was observed closely for detecting the signs of oestrus at 4 h interval from 0700 h to 2300 h after day 1 of injection. Oestrus of the goats was detected on the basis of behavioral and clinical signs, such as restlessness, loud vocal and bleating, constant wagging of tail from side to side, swollen and relaxation of the vulva orifice, reddening of the vulva, genital discharges, reduced feed intake, frequent urination, rapid to be mounted, homoeosexual mounting activities and preference to walk by the side of the buck.

Vaginal mucus was collected during oestrus to determine the characteristic crystallization (fern pattern or frothy pattern) patterns in the vaginal cells. Vaginal mucus was collected by sterile cotton swabbing from 16 does. Then thin-samples were stained, air dried and examined under microscope (10 x). Biopsy samples were collected immediately before injection of prostaglandins, during oestrus, after oestrus and at mid cycle. The samples were collected from the lateral wall of the vagina by metallic biopsy cannula. The samples were preserved in 10% neutral buffered formalin and kept until processing and histological evaluation. Fixed tissues were sliced into pieces and washed in running tap water for overnight. Then the tissues were dehydrated in ascending grade of alcohol (70% to 95%), absolute alcohol, cleared and embedded in paraffin. The tissue was sectioned (4-6 μm) in the rotatory microtome. The sections were stained with Haematoxylin and Eosin stain for microscopic studies.

Statistical analysis was done by using SPSS programme. Paired t-test was performed to observe the difference on the time onset of oestrus and duration of oestrus between Alpasterol and Luprotest injection.
RESULTS AND DISCUSSION

The effects of Allioprost and Lepstatol on synchronization results in doses are shown in Table 1. Seventy five percent does showed oestrus following 1st injection of Allioprost, while that of 2nd injection was 100%. On the other hand, 87.5% does were in oestrus following 1st and 2nd injection of Lepstatol.

Table 1. Comparisons of Allioprost and Lepstatol on synchronization responses in does - (mean ± SE)

<table>
<thead>
<tr>
<th>Groups</th>
<th>Synchronizing agent</th>
<th>No. of injection per doe</th>
<th>Total No. of Does injected</th>
<th>Does showed oestrus</th>
<th>Time of onset of oestrus (h)</th>
<th>Duration of oestrus (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allioprost (Galbionax*®)</td>
<td>1st injection</td>
<td>8</td>
<td>6</td>
<td>75</td>
<td>36.2 ± 7.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd injection</td>
<td>8</td>
<td>6</td>
<td>100</td>
<td>57.4 ± 6.56</td>
</tr>
<tr>
<td></td>
<td>Lepstatol (Prostavox*®)</td>
<td>1st injection</td>
<td>8</td>
<td>7</td>
<td>87.5</td>
<td>37.5 ± 4.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd injection</td>
<td>8</td>
<td>7</td>
<td>87.5</td>
<td>49.5 ± 0.46</td>
</tr>
</tbody>
</table>

The mean time of onset of oestrus and duration of oestrus were 36.2 ± 7.92 h, and 57.4 ± 6.56 h and 20.0 ± 4.40 h and 28.5 ± 0.63 h, respectively following 1st and 2nd injections of Allioprost (Table 1). The similar parameters were 37.0 ± 4.52 h and 49.5 ± 0.46 h and 21.0 ± 4.60 h and 27.3 ± 0.77 h, respectively following 1st and 2nd injections of Lepstatol. In paired t-test there were no significant difference (p > 0.05) in response between the Allioprost and Lepstatol in does in either the mean time of onset of oestrus and duration of oestrus following 1st and 2nd injections. This mean time of onset of oestrus in does following Allioprost injection is similar to some of the published works (Armstrong and Eves 1983; Brettshfield et al., 1983; Pandey and Isrwal, 1990), where they used cloprostenol and DDAVP for synchronization. There are limited literatures available on the effects of Lepstatol as synchronizing agent. The mean time of duration of oestrus in does in this study is similar to the other published works in goats (Martensseki et al., 1992). However, this result differs from other works (Pandey and Isrwal,1990; Armstrong and Eves,1983 and Isrwal et al.,2000).

The results of this study lead to the conclusion that both Allioprost and Lepstatol may be suitable for synchronization of oestrus in Black Bengal goats in respect of time of onset of oestrus and duration of oestrus.

REFERENCES

Effects of alprenolol and bupropranol on oestrus synchronization


