

Short Communications

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Evaluation of G6G Synchronization Protocol in the Treatment of Postpartum Anestrous Ongole Cows

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ABSTRACT

Treatment of postpartum lactating anestrous Ongole cows (n=8) using G6G hormonal protocol was undertaken. Following the treatment, 7 cows exhibited estrus after second PGF₂α injection. The estrus detection rate was 87.5 (7/8) per cent. Mean time to onset of estrus was observed as 34.3±4.08 h. The per cent of cows that showed intense, intermediate and weak estrus were 42.86, 57.14 and 0.0 per cent. The peak estrus synchrony with highest number of animals exhibiting estrus between 24 to 48 h was 57.14 (4/7) per cent. The artificial insemination submission rate was 87.5 (7/8) per cent. The conception rate at induced estrus in the present study for G6G treatment group was 62.5 (5/8) per cent. In the present study, overall conception rate among the postpartum lactating anestrous Ongole cows was higher with 75.0 (6/8) per cent in G6G group compared to 25.0 (2/8) per cent in the control group. The results of the present study with inseminations at induced estrus in postpartum lactating anestrous Ongole cows appears to be an effective method of managing fertility by using G6G protocol.

Keywords

Anestrous, Estrus,
G6G, Ongole cows,
Postpartum

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Introduction

India is a treasure house of *Bos indicus* breeds. Ongole was the first Indian breed of cattle to gain worldwide recognition for its adaptability to various climatic conditions (Vinoos *et al.*, 2007). Clinical surveys in India have revealed that the incidence of postpartum anestrus due to inactive ovaries affects the economy of

farming community. It is one of the most common reproductive disorders encountered in livestock farms leading to prolonged inter-calving period and reduced milk production. Estrus synchronization protocols were one of the effective methods to induce estrus and ovulation with enhanced conception rates in anestrous cows. Use of G6G protocol in treatment of postpartum anestrous cows was

studied by several scientists (Heidari *et al.*, 2017). The present study was undertaken to evaluate the efficacy of G6G protocol on pattern of estrus and fertility in postpartum lactating anestrous Ongole cows.

Materials and Methods

Postpartum anestrous Ongole cows maintained under standard feeding and manage mental conditions at Cattle Project, Livestock Research Station, Lam Farm, Guntur, were included in this study. These postpartum anestrous cows were randomly allotted into two experimental groups (G6G and Control groups each consisting of 8 animals). In G6G group, cows were administered with IM injection of Cloprostenol sodium (Pragma, Intas) @ 500 µg on day 0, followed by IM injection of GnRH analogue (Buserelin acetate, Pregulate, Virbac) @ 10 µg on day 2 and Ovsynch treatment was initiated with a gap of 6 days which consisted of an IM injection of GnRH analogue (Buserelin acetate, Pregulate, Virbac) @ 10 µg on day 8, IM injection of Cloprostenol sodium (Pragma, Intas) @ 500 µg on day 15 and another dose of GnRH analogue (Buserelin acetate, Pregulate, Virbac) @ 10 µg on day 17 and timed A.I (TAI) was done at 16-18 hr after the final dose of GnRH injection whereas, 8 untreated cows were kept as Control group. At induced/spontaneous estrus the following parameters were studied viz., estrus response, intensity of estrus and degree of estrus synchrony. In G6G group, fixed time inseminations were performed at 16-18 hrs after the final dose of GnRH injection, while in control group the cows were inseminated at spontaneous estrus by adopting AM-PM rule. Cows in estrus were inseminated using good quality of frozen thawed semen. Cows detected at subsequent estrus were re-inseminated up to 3 cycles and in non return cases pregnancy was confirmed per rectum at 60 days after AI. Conception rate and overall

conception rate were recorded for both the groups under study. The results were analyzed as per standard statistical procedures.

Results and Discussion

The estrus response percentage following G6G protocol was 87.5 (7/8), while in control group it was 37.5 (3/8). Three cows in G6G protocol exhibited estrus after first PGF_{2α} injection during the treatment period. This could be due to presence of corpus luteum at the time of 1st PGF_{2α} in this group. During this period, none of the cows exhibited visible estrus signs in control group. On the contrary, Ahmed *et al.*, (2017) recorded 100.00 per cent estrus response with G6G protocol. The variation in the estrus response could be attributed to season, parity, type of feeding, management practices and geographical variations.

The mean time to onset of estrus was 34.3±4.08 (24 to 48) hours in G6G group. Ahmed *et al.*, (2017) reported that the onset of estrus was 46.40±0.33 h, which was longer than the present observation.

The intensity of estrus in G6G group was intense, intermediate and weak in 42.86, 57.14 and 0.0 per cent of cows, respectively with peak synchrony of 57.14 (4/7) per cent in cows in estrus between 24 to 48 hours after treatment. The present findings are in contrast to Ahmed *et al.*, (2017) who reported intense estrus (28.57%), intermediate estrus (57.14%) and weak estrus (14.28%) with G6G treatment. All the three (3/10) cows in the control group of the present study have shown intermediate to weak estrus during the treatment period.

In the present investigation, intense estrus was observed at the rate of 42.86 per cent (3/7) in G6G group, out of which all have conceived (3/3). Intermediate estrus was observed at the

rate of 57.14 per cent (4/7) in G6G, out of which two cows conceived (2/4). In the control group, one out of two cows that exhibited intermediate estrus was conceived, where as the single cow that exhibited weak estrus failed to conceive in the present study.

The conception rates were 62.5 (5/8) and 12.5 (1/8) per cent in G6G group and control groups, respectively. This was similar to the findings of Ahmed *et al.*, (2017) who reported conception rate of 71.4 per cent. The overall conception rate in postpartum lactating anestrus Ongole cows treated with G6G group was 75.0 (6/8) per cent, while in control group, the same was 25.0 (2/8) per cent. On the contrary, the overall conception rate in G6G protocol group recorded by Dirandeh *et al.*, (2015) was 50.00 per cent, which was lower than the present study. The variations in the conception rate might be due to differences in active principle of the hormones, type of breed and seasonal variations.

It was concluded from the present study that G6G protocol could be effectively used to resume ovarian cyclicity in postpartum anestrus cows under field conditions by practicing veterinarians.

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