SHORT COMMUNICATION

EFFICACY OF PRESYNCH-OVSYNCH-56 PROTOCOL IN INCREASING THE CONCEPTION RATE IN REPEAT BREEDER COWS

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ABSTRACT

A total of 30 repeat breeder cows that did not conceive even after three or more inseminations were divided into two equal groups. Cows in Group-I were kept as control and inseminated once during the observed estrus. Cows in Group-II (Treatment) were subjected to Presynch-Ovsynch-56 protocol and subjected to Fixed Time Artificial Insemination. Blood was collected from both the groups on the day of AI and day 6 post-AI for serum progesterone estimation. Cows in both groups that returned to estrus following the first AI were re-inseminated. There was no significant difference in the mean serum progesterone concentration between the groups both on the day of AI and day 6 post-AI. There was no significant difference in the first, second service and overall conception rate between the groups. However, Presynch-Ovsynch-56 protocol resulted in an acceptable overall conception rate of 33.33 % in repeat breeder cows compared to 20 % obtained in control repeat breeder cows.

Key words: Presynch-Ovsynch-56, Repeat breeder cows, Conception rate.

INTRODUCTION

Ovsynch has been extensively used in lactating dairy cows to synchronize estrus and ovulation with 30% synchrony only (Peters and Pursley, 2003) on different stages of oestrous cycle. When Ovsynch was initiated between 5-12 days of oestrous cycle (early luteal phase) fertility rates were increased (Moreira *et al*., 2001) while pre-synchronizing the cows with two $PGF_{2\alpha}$ at 14 days apart and initiating Ovsynch 12 days after the second $PGF_{2\alpha}$ further improved the conception rate (Colazo *et al*., 2013). Therefore, the present investigation was carried out to evaluate the efficacy of Presynch-Ovsynch-56 on conception rate in repeat breeder cows.

Thirty apparently healthy repeat breeder cows with Body Condition Score of 2.5 to 3.5 were selected and randomly divided into two groups with 15 cows in each group. Cows in Group-I (Control) were inseminated at observed estrus without any treatment. Cows in Group-II (Treatment) were subjected to Presynch-Ovsynch-56 as per the protocol described by Souza *et al*. (2008) consists of two injections of $PGF_{2\alpha}$ 14 days apart and initiation of Ovsynch-56, 12 days after the second $PGF_{2\alpha}$. All these cows were inseminated at 16 h interval after the second GnRH injection. Cows in both the groups were subjected to blood collection both on the day of AI and day 6 post-AI and the separated serum samples were preserved at -20° C until analysis.

Progesterone estimation was carried out in the serum using ELISA kit (Labor Diagnostika Nord GmbH & Co. KG, Germany). Cows in both the groups were watched closely for return of estrus and those that returned to estrus following the first AI were re-inseminated. Pregnancy diagnosis was done by rectal examination on day 45 post-insemination. The first, second service and overall conception rate was calculated and statistically compared by using Chi-square test as per Snedecor and Cochran (1994).

The mean values of serum progesterone concentration on the day of AI and day 6 post-AI between the groups are presented in Table 1. The serum progesterone values recorded on the day of AI for both the groups are comparable with the findings of Selvaraju *et al*. (2010). In both the groups there was a significant increase in progesterone concentration from the day of AI to day 6 post-AI. Even though statistically non-significant, there was an increase in serum progesterone concentration on day 6 post-AI in treatment group compared to control cows.

Table I. Progesterone levels on day of AI and day 6 post-AI between groups

Day/Group	Progesterone level (ng/ml)	
	Control	Treatment
Day of AI	0.54 ± 0.07	0.51 ± 0.05
Day 6 post-AI	2.19 ± 0.18	2.30 ± 0.30

The first service, second service and overall conception rate obtained between the two groups is presented in Table II. No significant difference was noticed in the first service conception rate between the two groups. The first service conception rate obtained for the treatment group is much lower than the conception

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rate (41.7 %) reported by Souza *et al*., (2008) with the similar protocol in postpartum dairy cows. This could be due to the reason that animals included in in the present study were repeat breeder cows. The second service conception rate, though non-significant, was higher in treatment group compared to control cows, indicating probable stabilization of endocrine profile of the synchronized animals during the subsequent estrous cycle. Even though non-significant, the overall conception rate was better in treatment group compared to control group.

Moreira *et al*. (2001) stated that fertility increased and pregnancy rates were higher when Ovsynch was initiated between 5-12 days of the estrous cycle. Initiating Ovsynch protocol after pre-synchronizing with $PGF_{2\alpha}$ brings most of cows into the 5-12 days window of the estrous cycle. When Ovsynch was initiated at this stage, conception rates were higher as compared to the Ovsynch protocol alone (Colazo *et al*., 2013). Further, the two $PGF_{2\alpha}$ injections in Presynch improve uterine defense mechanism and clears the subclinical infections (Murugavel *et al*., 2003). From the present study, it can be concluded that the conception rate in repeat breeder cows can be improved by adopting Presynch-Ovsynch-56 protocol.

Table II. Conception rates in different groups

Group	No. of cows	Number Conceived (Conception rate)		
		I Service	II Service	Overall
Control	15	2 (13.33 %)	1 (7.69 %)	3 (20.00 %)
Treatment	15	3 (20.00 %)	2 (16.67 %)	5 (33.33 %)

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