

Four Different Therapeutic Regimens for Management of Repeat Breeder Dairy Cattle in Theni District of Tamilnadu

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Abstract The objective of this study was to evaluate the efficacy of four different treatment regimens for repeat breeder dairy cattle with antibiotic and hormonal. The study was conducted in 50 apparently healthy crossbred repeat breeding dairy cows and divided in to five groups with 10 animals each. Animals of group 1 were administered 2 ml of hydroxyl progesterone i/m administered on 4th day of estrum after 1st insemination. Animal in group 2, were administered 60 ml of diluted cephalixen intra uternally immediately after the first time artificial insemination. Animals in group 3 and 4 were administered i/m 1500 IU human chronic gonadotrophin and i/m 10 mg GnRH analogue respectively, immediately after first insemination. All the 5 groups' animals were re-inseminated at interval of 12 hrs after the first insemination. The group 5 animals were inseminated without any hormone or antibiotic therapy and were kept as control for the various treatments. Pregnancy diagnosis was carried out in all groups at 60 days after AI by per rectal examination. Analysis of data showed that there was a significant lower in duration of estrum in the treatment compared to control group except group 2. The conception rate in groups 1 to 5 was 40; 40; 50; 30 and 30 per cent respectively. A maximum of 50 per cent conception rate was observed in group 3 repeat breeder dairy cows. All groups were re-inseminated at 12 hrs interval for increasing the conception rate in repeat breeder dairy cows with prolonged oestrus.

Keywords *Repeat Breeder Dairy Cattle; Four Different Treatment Regimens; Theni District of Tamilnadu*

1. Introduction

Repeat breeding has long been considered as one of the important reproductive disorders in dairy cattle and its incidences are varies among different management systems, environments and regions. GnRH or human Chorionic gonadotrophin (hCG) administration at the time of insemination favours LH surge, which results improved conception rate. Progesterone or intrauterine antibiotic administration prevents the early embryonic mortality, which results in improved conception rate. In this paper, four therapeutic approaches viz, progesterone, intrauterine antibiotic, human chorionic

gonadotrophin and GnRH analogue were used, following artificial insemination in repeat breeding dairy cattle and their efficacy and pregnancy rate were compared.

2. Materials and Methods

The study was conducted in 50 apparently healthy crossbred repeat breeding dairy cows. The dairy cows showing estrual discharge for more than 36 hours were grouped under prolonged Oestrus. They were selected at random and divided into five groups with 10 animals each. Animals of group 1 were administered 2 ml of hydroxyl progesterone (Duroprogen–Vetcare Pvt Ltd) i/m administered on 4th day of estrus after 1st insemination. Animal in group 2, were administered 60 ml of diluted cephalixin (Lixen IU-KAPL Bangalore) intra uterally immediately after the first time artificial insemination. Animals in group 3 and 4 were administered i/m 1500 IU human chorionic gonadotrophin (Chorulon-Intervet Pvt Ltd) and i/m 10 mg GnRH analogue (Buserelin Acetate – Receptal - Intervet Pvt Ltd) respectively, immediately after first insemination. All the 5 groups' animals were re-inseminated at interval of 12 hrs after the first insemination. The group 5 animals were inseminated without any hormone or antibiotic therapy and were kept as control for the various treatment regimens. Pregnancy diagnosis was carried out in all groups at 60 days after AI by per rectal examination and the obtained data were subjected to statistical analysis.

3. Results and Discussion

Groups 1, 2, 3, 4 and 5 the mean duration of estrus before treatment were 75.00±3.17; 71.50±2.16; 75.12±2.76; 70.00±1.76 and 74.13±3.10 hours respectively and mean duration of estrus after treatment were 48.21±3.12; 70.00±1.76; 48.13±3.12; 49.12±2.81 and 73.36±3.14 hours respectively. Analysis of data showed that there was a significant lower in duration of estrus in the treatment compared to control group except group 2. Mathew et al. (2013) reported that treatment with hCG or GnRH analogue at the time of insemination affected the duration of estrus. Tanabe et al. (1994) did not find any difference on treatment with GnRH.

On 11th day of cycle, palpation of ovary indicated functional CL were present in all treatment groups where as in control group animals, only 7 out of 10 (70%) indicated presence of functional CL. Among a total of 47 ovulatory animals both treatment and control group, 30 animals (63.8%) exhibited presence of functional CL on right ovary and remaining 17 animals (36.2%) exhibited presence of functional CL on left ovary. This indicates that right ovary was more active than left ovary during induced and normal cycles in cattle.

The conception rate in groups 1 to 5 was 40; 40; 50; 30 and 30 per cent respectively. A maximum of 50 per cent conception rate was observed in group 3 repeat breeder dairy cows.

The conception rate of group 1 was 40 per cent. Ferguson et al. (2012) reported 40 to 50 per cent conception rate in progesterone supplemented repeat breeder dairy cows.

The conception rate of group 2 was 40. Awasthi and Nema (1995) reported that 90 per cent conception rate in 1.5 g and 750 mg of cephalixin treated repeat breeder dairy cows.

The conception rate of group 3 was 50. Patel et al. (2010) reported 83.3 per cent conception rate in 1500 IU hCG treated repeat breeder. Mathew et al. (2013) reported that 75 per cent conception rate in 1500 IU hCG treated repeat breeders with two insemination.

The conception rate of group 4 were 30 and 40 per cent when treatment with 10 mg GnRH analogue. Kharche and Srivastara (2007) reported high conception rate of 58 per cent when 10 mg GnRH analogue was administered in cows at the time of insemination. Patel et al. (2010) reported a lower

conception rate 28 per cent in 10 mg Buserelin treatment. Mathew et al. (2013) quoted 12.5 per cent and 25 per cent conception rate in first AI and subsequent AI in repeat breeder dairy cows treated with 10 mg Buserelin.

The conception rate of control group 30 per cent was obtained with double insemination at 12 hrs interval without any hormonal treatment. Hernandez Ceron et al. (1993) observed that conception rate of repeat breeder were 34.6 per cent with double insemination.

4. Conclusion

The study was carried out to find out the efficacy of progesterone, intra uterine antibiotic, hCG and GnRH analogue for increasing the conception rate in 50 apparently healthy crossbred dairy cows with prolonged oestrus. A higher overall conception rate of 50 per cent was obtained in repeat breeder dairy cows treated with hCG compared to progesterone on 4th day after insemination (40%); intra uterine antibiotic (40%) GnRH analogue (30%) after immediately insemination and control (30%) respectively. All groups were re-inseminated at 12 hrs interval for increasing the conception rate in repeat breeder dairy cows with prolonged oestrus.

References

- Awasthi, M.K., and Nema, R.K. *Comparative Efficacy of Some Broad Spectrum Antibacterial Medicines in Repeat Breeder Cows under Field Conditions*. Indian J. Anim. Reprod. 1995. 16 (2) 103-104.
- Ferguson, C.E., Kesler, D.J., and Godke, R.A. *Improving Pregnancy Rates in Problem Breeder Cattle by Administration of 15 mg of Progesterone on Days 3-5 Post Mating*. J. Appl. Anim. Res. 2012. 40 (3) 173-178.
- Hernández-Cerón, J., Zarco, L., and Lima-Tamayo, V. *Incidence of Delayed Ovulation in Holstein Heifers and Its Effects on Fertility and Early Luteal Function*. Theriogenology. 1993. 40; 1073-1081.
- Kharche, S.D., and Srivastava, S.K. *Dose Dependent Effect of GnRH Analogue on Pregnancy Rate of Repeat Breeder Crossbred Cows*. Animal Reproduction Science. 2007. 99; 196-201.
- Mathew, R. Aravinda, M., Ghosh, K.N., Kurien, M.O., and Harshan, H.M. *Comparison of Human Placental Extract, hCG and GnRH Analogue on Fertility of Repeat Breeding Cattle*. Indian Vet. J. 2013. 90 (4) 57-59.
- Patel, J.A., Dharni, A.J., Kavani, F.S., Panchal, M.T., and Ghodasara, D.J. *Therapeutic Management and Changes in the Endometrium of Repeat Breeding Cows*. Indian J. Anim Reprod. 2010. 31; 1-6.
- Tanabe, T.Y., Deaver, D.R., and Hawk, H.W. *Effect of Gonadotropin-Releasing Hormone on Estrus, Ovulation, and Ovum Cleavage Rates of Dairy Cows*. J. Anim. Sci. 1994. 72; 719-724.