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Comparison of hCG and GnRH in Enhancing Pregnancy Rate of Non-Lactating Cycling Brood Mares

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Abstract : Mares are considered to be seasonally polyestrous animals. The breeding season of mare ranges from March to May in Pakistan. However, fertility problems of mares have been trifling the horse breeders and stud owners since long, and it comes out that the fertility status of mares in Pakistan is relatively lower than the world average. The aim of the present study was to compare the effect of hCG and GnRH in improving pregnancy rate of mares in a transition period of month March and April. A total of n=66 mares showing normal estrus cycles with age ranging 5-12 y, weighing between 400-600 kg, BCS 6 ± 0.5 (1-9) and lactation varied from first to 5th were included in the experiment. These mares were administered PGF2α (75 µg; Dalmazine®, Fatro, Italy; 1 ml; i.m.) and divided into 3 groups. Mares of group 1 (n=22) were administered GnRH (100 µg; Dalmarelin®, Fatro, Italy; 4ml; im) while group 2 (n=22) mares were given hCG (5000 IU; IVF-C, LG Pharma; 1ml; iv). Likewise, mares of group 3 (n=22) were injected normal saline. Each treatment was given, when follicle attained the size of 35mm, keeping in view, the maturity of ovulating follicle at 35mm size and response to each treatment after routine ultrasound examination. All the mares of three groups were bred at 12 and 36 hours of treatment when the follicle reached the size of 35mm measured by ultrasound examination. Pregnancy was diagnosed by ultrasonography on day 18th and 42nd mating. On day 18th, pregnancy rate was 81.8% for hCG followed by 54.5% for GnRH and 45.5% for control. On day 42nd, pregnancy rate was (47.4%) for hCG which is significantly high ($p<0.05$) followed by GnRH (31.6%) and control (21.1%). Additionally the pregnancy loss was (25%, 20% respectively) in control and GnRH treated groups; whereas, hCG treated group showed no pregnancy loss (0.00%). Since no embryonic loss has been observed with hCG treatment during current study. Also hCG treated mares were 7.87 times more likely to conceive than controls. There were two times more chances of pregnancy in hCG treated mares than GnRH treated mares Therefore, it is concluded that the use of hCG in breeding season can improve pregnancy rate at a significant level when compared with GnRH hormone.

Keywords : mares, ovulation, hCG, pregnancy rate
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