

EVALUATION OF SEVERAL eFSH TREATMENTS FOR SUPEROVULATION IN MARES

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eFSH has been shown to induce superovulation in normal cycling mares. However, there are some occasions where mares developed several large follicles and these follicles did not ovulate or they ovulate but embryo recovery per ovulation is low. The standard superovulatory treatment with eFSH is 12.5 mg twice per day. It may be that once-per-day treatment would lessen the chance of overstimulation and poor embryo recovery per ovulation. Ovarian hyperstimulation can be minimized in women by withholding exogenous gonadotropins prior to administration of an ovulatory agent. No studies have been conducted in the mare where hCG administration is delayed after the end of eFSH treatment. The objectives were to determine if: (1) once-per-day injection of eFSH would result in a greater number of mares ovulating after eFSH treatment, (2) delaying hCG for 30 h after the final eFSH would improve ovulation and embryo recovery, and (3) eFSH for 3.5 days followed by administration of eFSH with a higher LH component would improve ovulation rate and embryo recovery.

Forty normal mares 3–13 years of age were used over two treatment cycles. Data from 73 cycles were obtained. At the time of ovulation, mares were randomly assigned to one of four treatment groups: (1) administration of 12.5 mg of eFSH twice daily until half of the cohort of follicles was >35 mm, then 2500 IU of hCG; (2) 12.5 mg of eFSH twice daily until half the cohort of follicles was >32 mm, then hCG given 30 h later; (3) 12.5 mg of eFSH for 3.5 days, then 12.5 mg of eFSH containing a greater amount of LH until half the cohort of follicles was > 35 mm then hCG was administered; (4) 25 mg of eFSH once-per-day until >35 mm follicle then hCG. Mares were inseminated at the time of hCG with 1 billion PMS and inseminated daily until all ovulations occurred. Embryo recovery was performed 8 days after hCG during cycle 1, and 9 days after hCG during cycle 2. During cycle 1, the number of >35-mm follicles was greater in mares in Group 2 than for mares in Groups 3 and 4. However, the number of ovulations in the four groups was similar (3.4, 3.8, 2.5 and 2.5). Embryo recovery per mare per ovulation was similar among the four groups (1.6, 1.7, 1.5 and 1.3). In the second treatment cycle, the number of >35 follicles was greater for mares in Group 2 than Group 4 (4.7 versus 2.4). The number of ovulations was 3.2, 4.6, 4.4 and 3.0 for Groups 1–4. The number of embryos per mare was similar among the four groups (2.2, 2.6, 2.2 and 2.5). On average for the 73 cycles, the number of ovulations was 3.4 and the number of embryos recovered was 2.1.

Embryo recovery in treatment cycle 2 was greater than that of treatment cycle 1. Administration of 12.5 mg of eFSH twice daily and delaying hCG for 30 h improved ovulation rate and embryo recovery compared to once daily treatment of mares with 25 mg of eFSH.

Keywords: eFSH; Superovulation; Embryo recovery