INTERVAL FROM TREATMENT TO OVULATION IN MARES RECEIVING PROSTAGLANDIN DURING EARLY VERSUS MID-DIESTRUS

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Giving prostaglandin $F_{2\alpha}$ ($PGF_{2\alpha}$) for the purpose of luteolysis and ultimately the advancement of the next ovulation (OV) is an important tactic in horse breeding management. However, the role of progesterone (P_4) feedback and its effects on follicular dynamics in horses is not fully understood. We hypothesize that mares receiving $PGF_{2\alpha}$ before day 5 post OV will have a prolonged interval from treatment to OV than mares receiving $PGF_{2\alpha}$ treatment during mid-diestrus. The present study compares concentrations of plasma P_4 and follicle stimulating hormone (FSH) and follicular growth until the next ovulation in cycling mares treated with $PGF_{2\alpha}$ during early diestrus (day 2 to 4 after ovulation) or mid-diestrus.

Reproductively cycling mares will be treated with intramuscular injections of 2.5mg $PGF_{2\alpha}$ 2, 3, and 4 days post-ovulation (Group 1), and 2.5mg $PGF_{2\alpha}$ during mid-diestrus(Group 2). Ovulation and echotexture of the uterus will be determined by palpation per rectum and transrectal ultrasonography performed three times per week or once daily on mares in estrus with follicle sizes $\geq$ 30mm. For measurement of concentrations of plasma P_4 and FSH, blood samples will be taken from the jugular vein daily, and approximately 2 mL of plasma will be transferred into cryovials and stored at -20 °C until RIA analysis. Preliminary results show that the mean (±SEM) interval from treatment to ovulation for Group 1 and Group 2 was 9.9 (± 1.4) and 8.0 (± 0.9) days, respectively. Hormonal assays are pending.