Intra-luminal application of prostaglandin (PG) E₂ to the equine oviduct on day 3 after ovulation hastens embryo transport into the uterine lumen by inducing the same physiological response as the endogenous embryonic signal of selective oviductal transport. More recently, laparoscopic application of PGF₂α to the surface of the oviduct has been used as a treatment for oviductal blockage in mares with unexplained infertility. Although it is apparently effective for restoring oviductal patency, laparoscopic application is invasive and requires specialized surgical equipment. Therefore, development of more practical methods of locally administering PGF₂α to the oviduct would be useful. We hypothesized that deep-horn intra-uterine application of PGF₂α would hasten oviductal transport, serving as a “proof of principle” for using that route of delivery to restore oviductal patency. Therefore, the objective of this study was to determine if deep-horn intra-uterine application of PGF₂α on day 3 after ovulation would hasten oviductal transport. Sixteen mares, 2 to 12 years old, were examined daily with transrectal palpation and ultrasonography until a follicle ≥35mm and prominent uterine edema were present, at which time they were inseminated with at least 500 million progressively motile spermatozoa and administered an ovulation-inducing agent; 10 mares (5/group) received 1.8 mg deslorelin acetate IM (SucroMate™ Equine, Thorn BioScience LLC, Louisville, KY) and 6 mares (3/group) received 2,500 IU hCG IV (Chorulon®, Intervet/Merck Animal Health, Summit, NJ). Daily examinations were continued until the day of ovulation (day 0). Mares that did not ovulate within 48 hours of breeding were inseminated again. On day 3 mares were randomly assigned to receive 0.5 mg PGF₂α (Prepidil® Gel; Pfizer Inc., NY, NY) or an equal volume (2.5mL) of vehicle (240 mg colloidal silicon dioxide and 2.76 g triacetin) via deep-horn administration ipsilateral to ovulation. Twenty-four hours later (i.e., on day 4), embryo collection was performed using 4 L of flush medium and the efflux was examined for embryos and/or unfertilized oocytes. No embryos or oocytes were recovered from any PGF₂α-treated (0/8) or vehicle-treated (0/8) mares. When mares were examined for pregnancy on days 11 to 17, 2/8 (25%) PGF₂α-treated and 4/8 (50%) vehicle-treated mares were confirmed pregnant. These results indicate that deep-horn intrauterine application of PGF₂α does not hasten embryo transport, and therefore cannot be advocated as a treatment for oviductal blockage in mares.

**Keywords:** Equine, mare, oviduct, PGF₂α, embryo

**References**