Clinical assessment and treatment of infertility in a greater one horned rhinoceros

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A 7 year old, nulliparous greater one-horned rhinoceros (*Rhinoceros unicornis)* was housed with a younger male without breeding success. Under full immobilization (3.5 mg etorphine, 100 mg azaperone and 15 mg detomidine), a complete reproductive system examination was done and the hymen broken. During the next 4 years, under standing sedation (combinations of 100 - 150 mg of butorphanol and 12.5 -100 mg of midazolam, with either 4 - 5 mg medetomidine or 125 - 150 mg of azaperone), artificial insemination (AI) was performed 10 times with frozen-thawed sperm from different males. Estrous cycle monitoring and AI follow up was based on analysis of urinary estrogen and progesterone metabolite concentrations. Ovulation was successfully induced with 1 IM injection of 3.6 mg of deslorelin (SucroMate™, ThornBio Science, Louisville, KY). Last year, the female was trained for voluntary transrectal ultrasonography (EVO, curved linear array 3 - 6 MHz). Ovarian dynamics and uterine appearance were monitored 2 times/week and urinary hormones were measured 3 times/week. A follicle that attained 21 cm and had cloudy follicular fluid was designated an anovulatory follicle Additionally, significant persistent luminal fluid and moderate endometrial hyperplasia were present. Ovulation was induced on the day of AI and based on confirmation by urinary hormone concentrations, occurred 48 hours later. Oxytocin (25 USP) was given 1 day before and 1 day after AI. Ultrasonography confirmed lack of intraluminal fluid and no accumulation. Urine creatinine concentrations were increased (attributed to exogenous oxytocin) 1 day after each oxytocin injection.

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