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Transcervical embryo recovery in Lacaune ewes superovulated with different doses of FSH

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This study assessed the effect of different FSH dosages for superovulation and the feasibility of transcervical embryo recovery in Lacaune ewes. Ewes ($n = 25$) received 60 mg medroxyprogesterone acetate sponge (Progespon[®], Syntex, Buenos Aires, Argentina) for nine days, 37.5 µg d-cloprostenol i.m. (Prolise[®], Tecnopec, São Paulo, Brazil) 24 h before sponge removal and 50 µg gonadorelin (GnRH analogue, Gestran[®], Tecnopec, São Paulo, Brazil) 24 h after sponge removal. Superovulatory treatments consisted of 100 mg (G100, $n = 13$) or 200 mg (G200, $n = 12$) of porcine FSH (Folltropin[®]-V; Bioniche Animal Health, Belleville, Canada), given i.m. (twice daily) for three consecutive days, in decreasing doses (25, 25, 15, 15, 10 and 10%), starting at 60 h before sponge removal. Ewes were checked for estrus twice daily and were naturally mated by fertile rams (4:1 ratio) while in estrus. Transrectal ovarian ultrasonography was performed at the 5th day after estrus, to count the number of corpora lutea (CL) with Doppler mode ultrasound (Mindray M5VET[®], Shenzhen, China – 8.0 MHz). All ewes received 37.5 µg d-cloprostenol (Prolise[®], Tecnopec, São Paulo, Brazil) and 1 mg estradiol benzoate (Sincrodiol[®], OuroFino, Cravinhos, Brazil) i.m. 16 h before uterine flushing and 50 IU oxytocin (Ocitocina forte UCB[®], São Paulo, Brazil) i.v. 20 min before uterine flushing. Embryo collection was performed at days 5 or 6 after estrus by transcervical technique (Fonseca et al., *Theriogenology*, 86:144-151, 2016) in all ewes that showed estrus and had more than 2 CL ($n = 17$). Qualitative data were analyzed by Fisher exact test. Quantitative data were analyzed by generalized linear models, using SAS[®] software (v 9.3, SAS Institute, Cary, USA). The percentage of ewes that showed estrus and the percentage of responding donors (> 2 CL) did not differ ($P > 0.05$) between treatments: 77% (10/13) and 62% (8/13) for G100 and 100% (12/12) and 83% (10/12) G200, respectively. The number of CL was higher ($P < 0.05$) for G200 (10.5 ± 1.5) than G100 (4.2 ± 1.5). Overall, cervical transposition and uterine flushing was possible in 100% (17/17) of ewes. The total time procedure was 32.3 ± 0.1 min for G100 and 27.7 ± 0.1 min for G200 ($P > 0.05$). The number of recovered structures and viable embryos per ewe collected was higher ($P < 0.05$) for G200 (7.5 ± 0.1 and 6.2 ± 0.1) than G100 (0.4 ± 0.6 and 0.4 ± 0.6), respectively. The dose of 200 mg of FSH promoted greater superovulatory response and recovery of viable embryos by transcervical technique. Probably, the poor ovulatory response with 100 mg of FSH was also affected by the formation of luteinized unovulated follicles. The protocol for cervical relaxation was efficient to allow the transcervical embryo recovery of Lacaune ewes.

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