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Superovulation and transcervical embryo recovery in Lacaune ewes raised under tropical conditions

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This study assessed two superovulatory treatments and the feasibility of transcervical embryo recovery in Lacaune ewes. Ewes (n=23) received medroxyprogesterone acetate sponges (60mg, Progespon[®], Syntex, Buenos Aires, Argentina) for nine (G9, n=23) or six (G6, n=23) days, 37.5 µg d-cloprostenol i.m. (Prolise[®], Tecnopec, São Paulo, Brazil) 24 h before sponge removal and were superovulated with 133 mg of porcine FSH i.m. (Folltropin[®]-V; Bioniche Animal Health, Belleville, Canada) in six decreasing doses (twice daily) at 60 h before sponge removal, under a crossover design. Ewes were checked for estrus twice daily and were naturally mated by fertile rams (4:1 ratio) while in estrus. Transretal ovarian ultrasonography (Mindray M5VET[®], Shenzhen, China - 8.0 MHz) was performed at first FSH injection to count and measure the follicles, and at the 5th day after estrus to count the number of CL with Doppler mode activated. All ewes received 37.5 µg d-cloprostenol and 1 mg estradiol benzoate (Sincrodiol[®], OuroFino, Cravinhos, Brazil) i.m. 16 h and 50 IU oxytocin (Ocitocina forte UCB[®], São Paulo, Brasil) i.v. 20 min before uterine flushing. Embryo recovery was performed at the 6th day after estrus by transcervical method. Qualitative data were analyzed by generalized linear models (GLM), with binomial distribution and logit link function. Quantitative data were analysed by GLM with normal or Poisson distribution (log transformation) when variables not assumed presumptions of ANOVA. Association of variables was evaluated by Pearson correlation, using software SPSS Statistics (IBM[®]Inc., Chicago, USA). The percentage of donors in estrus was 78% in both treatments, and the percentage of responding donors (>2CL) was 67.8±17.6% (G9) and 73.0±17.8% (G6, P>0.05). The numbers of follicles at first FSH with <3mm or >5mm were 11.7±3.9 and 0.8±0.2 for G9 and 12.5±4.3 and 1.2±0.2 for G6, respectively (P>0.05). The numbers of CL were 6.5±0.5 (G9) and 6.7±0.5 (G6), and did not differ (P>0.05). The number of follicles >5mm (r=0.38) were positively correlated (P<0.05) with ovulatory response. Overall, cervical transposition and uterine flushing were possible in 91% (31/34) of mated ewes, and did not differ between treatments (87 vs 94%). The time of cervical surpass and the total time of procedure were 4.7±0.6 and 24.1±1.7 minutes in G9 and 5.7±0.6 and 24.0±1.5 min in G6 (P>0.05). The number of recovered structures (5.6±0.6 vs 4.0±0.5) and viable embryos (2.8±0.5 vs 1.4±0.3) per ewe collected, did not differ (P>0.05) between G9 and G6. In conclusion, both treatments showed high variability in ovulatory response which might reduce the embryo yield average from donors. The protocol for cervical relaxation allowed the transcervical embryo recovery in high percentage of Lacaune ewes. Financial support: EMBRAPA (Project 02.08.02.005.00.04) and Fapemig (Project CVZ-PPM 00201-17).