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Donor evaluation and scoring for non-surgical embryo transfer in Santa Inês sheep

Avaliação e ranqueamento de doadoras para coleta de embriões não cirúrgica em ovelhas Santa Inês

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Multiple Ovulation and Embryo Transfer (MOET) can be used to maximize the offspring production of valuable and endangered animals. Given the several particularities of the ovine cervical anatomy, Non-Surgical Embryo Recovery (NSER) in ewes can be a challenge, resulting in extensive commercial use of surgical methods. However, several advances have been made on NSER techniques and instruments, cervical relaxation protocols and selection of donor ewes. NSER success depends, firstly, on adequate cervical clipping and traction and, then, on its transposition (Fonseca et al., 2019. *ReprodFertilDevel*, 31:17-26). This study checked the effectiveness of ranking the difficulty to clip/traction and traverse the cervix with the Hegar dilator as a predictor method for selecting suitable animals to undergo NSER. A total of 46 pluriparous Santa Inês received intravaginal sponges containing 60 mg medroxyprogesterone (Progespon[®], Syntex, Buenos Aires, Argentina) during six days plus 200 IU eCG (Novormon 5000[®], Syntex, Buenos Aires, Argentina) i.m. and 37.5 µg d-cloprostenol (Prolise[®], ARSA S.R.L., Buenos Aires, Argentina) latero-vulvar 24 h before sponge removal. Out of these, 42 ewes manifested estrus and were naturally mated during estrus. NSER was attempted seven days after estrus onset. The ewes received a relaxation protocol based on 37.5 µg d-cloprostenol latero-vulvar and 1 mg estradiol benzoate (Estrogen[®], Biofarm, São Paulo, Brazil) i.m. 16 h before NSER plus 50 IU oxytocin (Ocitocina Forte UCB[®], São Paulo, Brazil) i.v. 20 min before the procedure. NSER was performed following the method previously described (Fonseca et al., 2019. *ReprodDomAnim*, 54:118-125). Each animal received a grade according to the difficulty of traversing its cervix with the Hegar dilator: Grade 1 (very easy; <1 min; Grade 2 (easy; 1 to 3 min); Grade 3 (moderate difficulty; 3 to 7 min); Grade 4 (difficult; 7 to 10 min); and Grade 5 (impossible to penetrate). Data are presented in a descriptive form. Adequate cervical clipping and traction was done in 78.6% (33/42). NSER success rates were 100.0% (4/4) to score 1, 88.9% (8/9) to score 2, 90.9% (10/11) to score 3, 40% (2/5) to score 4 and 0.0% (0/9). Overall success of NSER rate was 72.7% (24/33). NSER was not possible in nine ewes for either the cervix was not located due to vestibule-vaginal stenosis (33.3%; 3/9) or cervix was adequately clipped but traction was not good enough to allow cervical transposing attempt (66.6%; 6/9). This grading system may indicate the probability of individual animals to successfully proceed with NSER. It is suggested that a selective system for donors should include an attempt to clip/traction/traverse the cervix, ranking the difficulty of the process, before starting a MOET/NSER protocol. Animals that receive scores 4 and 5 could be excluded from the protocol in order to prevent the use of unable or laborious animals, avoiding wasting resources. Financial support: Embrapa (02.13.06.026.00.04) and Fapemig (CVZ-PPM 00201-17)

Keywords: embryo recovery, Hegar dilator, sheep.

Palavras-chave: recuperação de embriões, dilatador de Hegar, ovelhas.