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Different progestagens sources do not affect the follicular population and the morphological quality of oocytes during ovarian stimulation in Santa Inês ewes

G.M. Bragança[1], J.M.G. Souza-Fabjan[1], R.I.T.P. Batista[1], L.S. Ribeiro[1], V.L. Brair[1], L.R. Côrtes[1], C.V. Souza[1], A.R. Taira[1], J.F. Fonseca[2], A. Menchaca[3], F.Z. Brandão[1]

[1]UFF - Universidade Federal Fluminense, Niterói, RJ, Brasil; [2]EMBRAPA - Embrapa Caprinos e Ovinos, Sobral, CE, Brasil; [3]IRAUy - Instituto de Reproducción Animal Uruguay, Montevideo, Uruguai.

In attempt to develop a hormonal protocol more suitable to produce good quality oocytes for use in biotechnologies, an earlier study demonstrated that FSH applied in multiple decreasing doses produced better quality oocytes. However, different progestagens implants used during ovarian stimulation have not yet been tested. The aim of this study was to investigate the effect of different progestagens during ovarian stimulation on follicular population and oocyte morphological quality in Santa Inês ewes. Thirty pluriparous ewes had their estrus synchronized by Day 0 protocol (Balaro et al., Domestic Animal Endocrinology, 54: 10-14, 2016). Day 0 (D0) of the protocol was considered 80 h after sponge removal and ovarian stimulation with pFSH (Folltropin-V, Bioniche Animal Health, Ontario, Canada). All ewes received 80 mg of pFSH distributed in three applications (50, 30 and 20%) every 12 h. At the time of stimulation, the ewes were divided in three groups (n = 10): (1) MAP, received intravaginal sponges containing 60 mg of medroxyprogesterone acetate (Progespon, Zoetis, São Paulo, Brazil); (2) P4 received a silicone device with 0.33 mg progesterone (CIDR, Eazi-Breed, Zoetis); and (3) Control, received no device (luteal P4). The ovarian evaluation was performed by transrectal ultrasonography (SonoScape, Shenzhen, China, 7.5 MHz linear transducer) from D-3 to D2 every 12 h. The follicles were classified as small (<3 mm), medium (3-5 mm) or large (>5 mm). Oocytes were recovered by videolaparoscopy (LOPU) and classified according to morphological quality in grade 1, 2, 3 and 4 (G1 and G2: good, G3: acceptable and G4: poor). Parametric data were analyzed by ANOVA and Tukey's test. For the non-parametric data, the chi-square test was used (significance $P<0.05$). There was no effect ($P>0.05$) of the progesterone source on the follicular population and oocyte morphological quality. On D0, the ewes of all groups had a similar follicular population regarding the number of follicles in each category (small, medium and large), the number of small follicles was higher than the medium follicles, which in turn was higher than the number of large follicles. On D2, the number of follicles in each category was also similar among groups, the number of small and medium follicles was higher than that of large follicles. Likewise, the number of G1 / 2 oocytes (MAP, 4.3 ± 0.9, P4, 5.3 ± 0.8 and Control, 3.7 ± 0.7), G3 (MAP, 1.4 ± 0.5, P4, 2.3 ± 0.8 and Control, 2.0 ± 0.6) and G4 (MAP, 0.2 ± 0.1, P4, 0.5 ± 0.2 and Control, 0.5 ± 0.2), as well as the recovery rate 61% (MAP), 80% (P4) and 67% (Control) was not different among the groups. In conclusion, the source of progestagens used during the ovarian stimulation protocol does not affect the follicular population, nor the oocyte quality. Exogenous progestagens may not be necessary when post-synchronization ovulation is confirmed by ultrasonography.