



**Is the vascularization percentage of the corpora lutea during the initial luteal phase affected by the dose of pFSH used in the superovulatory treatment of sheep?**

*O percentual de vascularização de corpos lúteos durante a fase luteal inicial é afetado pela dose de pFSH usada no tratamento superovulatório de ovelhas?*

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The in vivo production of embryos is used to accelerate the multiplication of the herds, but the efficiency of this biotechnology is widely variable in small ruminants. The variability of the superovulatory responses and the production of viable embryos has been related to several factors, including the dose of gonadotrophin used in the hormonal treatment of superovulation, and the occurrence of prematurely regressing corpora lutea. In this context, the present study was performed to evaluate the effect of different doses of pFSH on the superovulatory response and vascularization percentage of the corpora lutea (CLs) formed. Twenty-seven Santa Inês ewes (35-45kg of body weight and 2-3 years old) were submitted to synchronization protocol with intravaginal progesterone device (CIDR®) for nine days. On Day 0 and 8 were injected i.m. d-cloprostenol (37.5 µg, Prolise®). The superovulatory treatment started on Day 6 and consisted in eight decreasing injections (20, 20, 15, 15, 10, 10, 5 and 5%) with 12-hr intervals in total doses of 100 (G100), 133 (G133) or 200 mg (G200) of pFSH (Folltropin V®) (n=9/total dose). On Day 6, ewes also received 300 IU of eCG i.m. (Novormon®). Ultrasonographic (B-mode and Color Doppler) evaluations of the corpora lutea formed were daily conducted during the period corresponding to the initial luteal phase (Day 11 to 15). At the corresponding day of embryo collection, the superovulatory response (total number of CLs, number of normal (health) CLs, and number of regressing CLs) were evaluated by videolaparoscopy. The ultrasound images were assessment using specific software (Adobe FireWorks® CS6 and Image J®) to calculate the vascularization percentage of the CLs. Data were compared using the Tukey test ( $P < 0.05$ ). The superovulatory response (number of total CLs, normal CLs and regressing CLs) did not differ between groups (G100:13.8 ± 1.8, 11.1 ± 2.8 and 2.7 ± 1.7; G133: 8.7 ± 1.1, 8.6 ± 1.3 and 1.7 ± 1.1; and G200: 14.2 ± 2.4, 8.4 ± 3.2 and 6.8 ± 3.2, respectively). However, the vascularization percentage of the CLs was higher ( $P < 0.0001$ ) in G200 (62.4 ± 0.005%) than G100 (57.1 ± 0.006%) and G133 (59.2 ± 0.008%). In conclusion, the vascularization percentage of the corpora lutea during the initial luteal phase is affected by the dose of pFSH used in the superovulatory treatment of sheep. Despite this, the superovulatory response does not differ between doses of pFSH. Further studies are needed to determine the relationship between the vascularization percentage of the corpora lutea and its functionality. Financial support: FAPESP (n° 2017/04193-9).

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