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Buserelin treatment for timed artificial insemination in ewes.

Otávio Saraiva Pires ¹, Sérgio Farias Vargas Júnior ², Fernando Caetano de Oliveira ³, Gabriel Maggi ¹, Thifani Carlos Sessim ¹, Thais Trindade Colombo ¹, Rogério Ferreira ⁴, Arnaldo Diniz Vieira ¹, Bernardo Garziera Gasperin ¹, Rafael Gianella Mondadori ¹

¹UFPEL - Universidade Federal de Pelotas (Pelotas-RS), ²URCAMP - Centro Universitário da Região da fronteira (Bagé-RS), ³UFRGS - Universidade Federal do Rio Grande do Sul - Faculdade de Veterinária (Porto Alegre - RS), ⁴UFSC - Universidade Estadual de Santa Catarina - Chapecó (Chapecó - SC)

Resumo

Follicular growth and estrus synchronization are normally satisfactory for fixed-time insemination (TAI) in ewes treated with intravaginal device (IVD) containing medroxyprogesterone acetate (MAP) and eCG treatment at IVD removal. However, as the timing LH peak caused by discharge of gonadotropin-releasing hormone (GnRH) can vary, ovulations are dispersed among animals. Thus, the addition of buserelin (GnRH analog) to the treatment, may increase the synchrony of ovulations and, consequently, pregnancy rate, replacing or improving the efficiency of eCG treatment. To test this hypothesis, a study was conducted during the reproductive season (March and April in Rio Grande do Sul farms). We used 357 ewes, kept in native field, with a minimum body condition score of 2.5 (0-5). All animals remained with polyurethane sponge containing 60 mg of MPA for seven days and received 250 mg of cloprostenol at the time of IVD removal (day 7 = D7). Considering the availability of animals on different farms, three different experiments were conducted. In Exp. 1, on D7, animals were randomly allocated into two groups: eCG (n=156), animals treated with 200 IU of eCG; or eCG-GnRH (n=116), animals treated with 200 IU of eCG on D7 and 4 mg of buserelin at the time of insemination. In Exp 2, also on D7, the animals were allocated to: eCG (n=45), 200 IU eCG at IVD removal; or GnRH (n=40), treated with 4 mg buserelin at insemination. In both experiments, on D9 (54h after removal of the IVD), ewes were submitted to cervical superficial TAI using 100 x 10⁶ motile spermatozoa obtained from a semen pool collected from four rams with known fertility. Pregnancy was diagnosed by transrectal ultrasonography 24 days after TAI. Pregnancy data were analyzed using the Chi-square test, and P<0.05 was considered as significant. In Exp. 3, on D7, ewes were allocated to three groups: eCG (200 IU at IVD removal; n=10); eCG+GnRH (200 IU eCG at IVD removal and 4 mg of buserelin 36 h later; n=10); or GnRH (buserelin 36 h after IVD removal). Blood samples were collected 2, 6 and 12 days after TAI (54 h after IVD removal) for P4 analysis. Data were analyzed using mixed models for repeated data (P<0.05). In Exp 1, pregnancy rate tended (P=0.09) to be greater for eCG-GnRH (52.6%) compared to eCG (44.8%). In Exp. 2, pregnancy rate was significantly lower in GnRH (22.5%) compared to eCG (46.7%). In Exp. 3, there was no significant effect of group (P=0.66) or group x day (P=0.24) on P4 concentration, being observed a significant effect of day (P=0.001). The results indicate potential improvement on pregnancy rate with buserelin treatment at the time of TAI when eCG is administered at IVD removal, and this hypothesis should be tested on a larger number of animals. The use of buserelin alone, at the time of TAI, does not replace eCG treatment. Progesterone synthesis is not altered after eCG, eCG+GnRH or GnRH treatment.

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