115 FOLLICULAR GROWTH AND BLOOD FLOW OF THE DOMINANT FOLLICLE IN CROSSBRED RECIPIENTS TREATED WITH eCG

M. P. Palhao [A], N. S. Junior [A], C. R. B. Guimarães [A], C. A. C. Fernandes [A], M. E. O. Ferreira [A], M. Seber [A], W. S. M. Reis [A] and J. H. M. Viana [B]

[A] Unifenas, Alfenas, MG, Brazil;
[B] Embrapa, Juiz de Fora, MG, Brazil

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Abstract

This study aimed to explore changes in follicle diameter and blood flow of the dominant follicle (DF), in ovulation and embryo transfer rates, after inclusion of eCG in a protocol for timed embryo transfer. The effect presence or absence of a corpus luteum (CL) at the start of treatment was also included. Crossbred heifers (n = 116, *Bos taurus* × *Bos indicus*), with (n = 61) or without (n = 55) CL, were included in the same hormone protocol: Day 0 (D0), insertion of progesterone (P4) device (1.0 g, Sincrogest®, Ouro Fino, São Paulo, Brazil) and 2 mg of oestradiol benzoato (EB, Sincrodiol®, Ouro Fino); D8, removal of P4 device and injection of sodium Cloprostenol (0.250 mg mL^{-1}, Sincrocio®, Ouro Fino). On D8, the animals with and without CL – at the beginning of the protocol – were equally divided into 2 groups (G): G1 – injection of 300 IU (2.0 mL) of eCG (n = 56; Synchro eCG®, Ouro Fino); G2 – 2.0 mL of saline (n = 60). The ovulations were synchronized with 1 mg of EB on D9. From D8 to D11, the diameter of the DF and blood flow in its wall were recorded daily (M5 ultrasound with colour Doppler technology, 7.5-MHz linear array, DPS medical equipment, São Paulo, Brazil). Approximately 100 frames in colour-flow mode, containing entire cross-sections of the DF, were recorded during each examination. The area of the follicular wall with coloured pixels was measured with ImageJ software (Image Processing and Analysis in Java) from the frame with the largest blood flow signal. Before embryo transfer, all heifers were evaluated, and those with good-quality CL received frozen/thawed embryos (ethylene glycol 1.5 mol). Follicle diameter and blood flow area were compared between groups with or without CL before timed embryo transfer protocol and between eCG treatments. The PROC GLM procedure of SAS (version 9.0) and the t-test were used to assess the differences between means. Pregnancy diagnosis was performed on D35. Embryo transfer (ET) rate of the recipients and pregnancy rate were compared between CL or eCG treatments by the chi-squared test. Ovarian status, before hormone protocol, did not change (P > 0.05) the follicular growth of the DF. However, ovulation rate (78.8 *v.* 65.4%, P < 0.05) and ET rate (78.7 *v.* 65.4%, P < 0.05) were higher in animals with CL on D0. From D8 to D10, the inclusion of eCG did not affect (P > 0.05) follicular growth and blood flow of the DF. The time effect (P < 0.0001) for follicular blood flow had shown an increase in area of blood flow 24 h after implant removal (7.7 ± 0.7,^{b} 10.2 ± 0.7,^{a} and 12.3 ± 1.0^{a} mm^2, for Days 8, 9, and 10, respectively). The eCG did not affect (P > 0.05) the ovulation rate (71.4 and 73.3%, respectively, eCG and no eCG), however, approached an increased (P < 0.06) ET rate (78.8 *v.* 66.7%). The overall pregnancy rate (51.2%, 43/84) was not affected (P > 0.05) by evaluated variables. In summary, the addition of 300 IU of eCG on D8 of the timed embryo transfer protocol did not change the development of DF but increased the ET rate of the recipients.

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