Combination of estradiol-17β and progesterone is required for synthesis of PGF2α in bovine endometrial explants

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Abstract

The goal of this experiment was to evaluate the effect of two FSH protocols on follicle diameter and the number of oocytes obtained by transvaginal oocyte aspiration. Forty-six, healthy donor cows were randomly assigned to one of two treatments. To synchronize ovarian follicular growth, follicles > 2 mm were aspirated from all animals (D0 = Day 0 of treatment) using a 7.5 MHz convex ultrasound transducer (Scanner 200 Vet, Pie Medical). Experimental treatments were based on the day of follicular aspiration after animals received a single, 250 IU i.m. injection of FSH (Pluset, Serono). In Group 1 (G1; n = 19), animals received FSH on Day 1, and follicles were aspirated on Day 2 in order to have small follicles at the time of follicular aspiration. Animals from Group 2 (G2; n = 27) received FSH on Day 2, and the oocyte recovery was performed on Day 5 in order to aspirate large follicles at the time of follicle aspiration. Follicle number and diameter and the number and quality of oocytes were evaluated. A total of 716 follicles were aspirated (239 from G1 and 477 from G2). In G1, an average of 12.6 ± 1.4 follicles were aspirated per cow and all had a diameter of < 5 mm. In G2, 17.7 ± 1.1 follicles were aspirated per cow and all had a diameter of > 5 mm. The number of follicles and proportion of follicles for each diameter class (< 5, 5-10, and > 10 mm) were different between groups (P < 0.05). Four hundred and forty-eight oocytes (192 from G1 and 256 from G2) were obtained. Efficiency of oocyte recovery (number of oocytes divided by the number of follicles) was greater in G1 than in G2 although the average number of oocytes obtained per cow for each group did not differ (10.1 ± 1.27 and 9.4 ± 1.06 for G1 and G2, respectively). The FSH protocol affected follicular development and the efficiency of oocyte recovery.

Keywords: FSH, oocyte recovery, follicles, cattle.