RESTORATION OF OVARIAN ACTIVITY AFTER LONG-TERM SUBCUTANEOUS IMPLANTATION OF DESLORELIN IN NELORE (BOS INDICUS) COWS

Wolff Camargo Marques Filho¹, João Carlos Pinheiro Ferreira¹, Roberto Sartori Filho², Eduardo Trevisol¹, Ian Martin¹
¹Animal Reproduction and Veterinary Radiology, FMVZ/UNESP, Botucatu, ²Animal Science, Esalq/USP, Piracicaba, Brazil

Long-term treatments with deslorelin implants have been used in Bos taurus cows in which the main reported effects are the down-regulation of GnRHR on gonadotrophs, desensitization of the anterior pituitary gland to GnRH, abolishment of the pulsatile release of FSH and LH, suppression of follicular growth and arrest of follicles at 2-3mm in diameter after continuous treatment for 28d. The restoration of follicular activity occurs within 30 d after implant removal. However, the deslorelin implant has not been tested in Bos indicus and the ovarian function recovery time after the implant removal is unknown, which is the objective of this experiment. Eight cycling adult Nelore cows [body score ≥3 (0-5)] were were synchronized using the following protocol:

Day -11 (D -11): 2mg estradiol benzoate (EB; Estrogin®; i.m, Farmavet Ltda, Brazil) and an intravaginal progesterone device (DIB®; 1g, Intervet Schering-Plough, Brazil);

D -3: 12.5mg tromethamine Dinoprost (Lutalyse®, i.m, Pfizer Saúde animal, Brazil) and DIB removal;

D -2: 1mg EB and D 0: transrectal ultrasound ovary examination.

All animals had ovulated on D 0, when a subcutaneous deslorelin ear implant (GnRHa-Suprelorin®, Peptech Animal Health, Australia) was used and kept for 70 d. No ovulations were observed during this 70 d period. After implant removal, the emergence of 20.25 (±3.49) follicles per follicular wave was observed and the first ovulation occurred within 28 d (±11.23), which was similar to the time of first postpartum ovulation in Bos taurus (25.3 d) and Bos indicus (30 d). Each follicular wave after implant removal lasted 9.25 d (±1.98) and two or three follicular waves were observed before the first ovulation. Three animals presented follicular development in which despite having been observed follicle deviation, the diameter of dominant follicles did not exceed 8-10 mm. The other five cows had follicular waves characterized by the development of dominant follicles greater than 10 mm in diameter before becoming atretic. Three animals showed double ovulation similar to the observed in Holstein cow when the follicular wave emerged under low circulating progesterone concentration. In conclusion after deslorelin implant removal the ovarian activity similar to what observed in postpartum Bos indicus cows and a high frequency of double ovulation was also observed.

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