Animal Reproduction

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Folliculogenesis, oogenesis and superovulation

SHORT OR LONG-TERM PROGESTERONE PROTOCOLS ASSOCIATED WITH DIFFERENT FSH PRESENTATIONS FOR SUPEROVULATION IN ACYCLIC TOGGENBURG GOATS

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Resumo

This study aimed to evaluate short (six days, G6, n=28) or long-term (l7 days, G17, n=28) ovulation induction protocols using intravaginal controlled internal drug release devices (0.33 g of P4, CIDR®, Zoetis, São Paulo, Brazil) followed by superovulation (SOV) with 133 mg (G6A and G17A; n=14 each one) (Folltropin®-V, Vetoquinol, São Paulo, Brazil) or 250 IU (G6B and G17B; n=14 each one) (Pluset®, Hertape Calier, Barcelona, Spain) of pFSH, administrated in six decreasing doses (25, 25, 15, 15, 10 and 10%), every 12 h. The G6 protocol started with CIDR insertion simultaneously to the administration of 37.5 µg d-cloprostenol (Prolise®, Agener União, São Paulo, Brazil) i.m. (D0) and SOV started 48 h before CIDR removal. At G17 protocol, 37.5µg d-cloprostenol i.m. was administered at D11, SOV started at D15 and one injection of 250 IU hCG (Vetecor 5000®, Ceva, Juatuba, Brazil) at D19. In all animals, both estrus detection and mating started after the last dose of FSH and finished 60 h later and three doses of 75 mg flunixin meglumine (Flumax®, JA Saúde Animal, Patrocínio Paulista, Brazil) i.m. were administered at 84, 98 and 122 h after estrus onset. Transrectal ultrasound evaluations were performed on the day of the first FSH administration, after CIDR removal and six days later. Non-surgical embryo recovery (NSER) and embryo evaluation were performed on the sixth to seven days after first mating. Six hours before NSER, 37.5µg d-cloprostenol was administered for cervical dilation. Parametric variables were analyzed by ANOVA and t Student test, followed by the Tukey test; non-parametric variables were analyzed by Mann-Whitney test or Kruskal-Wallis test, followed by the Dunn test, chi-squared test or Fisher exact test. Goats that received 133 mg of pFSH presented a higher ($P<0.05$) estrus interval and duration (46.2±2.3 and 38.2±1.9 h) compared to 250 IU (35.3±2.5 and 31.3±3 h), although there was no difference ($P>0.05$) between groups when comparing only the length of the treatment (short or long). Similar ($P>0.05$) results were obtained for G6A, G6B, G17A and G17B regarding the mean CL number / goat (5.3±1.1; 5.9±0.9; 4.1±1 and 4.2±0.7) and rate of responsive goats [≥3 CL, 70 (710), 90 (910), 70 (710) and 73% (811)], respectively. There was also no difference ($P>0.05$) in the mean number of structures recovered between G6A (4.0±1.6), G6B (4.7±1.4), G17A (3.0±0.8) and G17B (5.0±1.6). The rate of viable structures was higher ($P<0.05$) in G6A (52.5%; 21/40) and G17B (54.5%; 30/55) than in G6B (10.6%; 5/47) and G17A (23.3%; 7/30) groups. We concluded that a short-treatment with 133 mg of FSH is an excellent option for SOV in goats as it presents a shorter exposure to P4, lesser time of CIDR use and higher number of viable structures in a shorter period.

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