89. Effect of bovine somatotropin (growth hormone) treatment on gonadotropin profiles and ovarian follicle populations during the post-partum period in beef cows in low body condition

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The effect of growth hormone on ovarian follicle development and on associated gonadotropin profiles was investigated. Thirty-two cows in moderately low body condition (BC): (2.21 s.e. 0.075) were fed to maintain BC after calving. At weeks 2, 4, 6 and 8 post partum, 17 animals (group T) received an injection (subcutaneous) of 320 mg bovine somatotropin (bST), designed to release 23 mg/day for 14 days. The other 15 cows (group C) were injected only with the carrier (sesame oil) at these times. Blood samples were collected via jugular catheters at 20-min intervals for 10 h at weeks 5 and 8 post partum. Mean concentrations (µg/l) of LH (0.52; s.e.d. 0.124), FSH (19.2; s.e.d. 3.202), LH pulse frequency (pulses per h) and LH pulse amplitude (µg/l) were not affected by bST treatment (0.15 s.e.d. 0.036) and 1.22 (s.e.d. 0.189) respectively) but the pulse frequency was higher in week 8 than in week 5 (0.17 v. 0.13; s.e.d. 0.011; P < 0.05). Following ovariectomy at week 9, the number of small (3 to 7.9 mm diameter) and large (≥8 mm diameter) follicles (32.8 s.e. 4.00 and 1.75 (s.e. 0.29) respectively) were not affected by bST treatment, but four of the 17 (T) cows ovulated compared with 0 of 15 in the (C) group (P = 0.10). The results suggest that growth hormone does not affect gonadotropin profiles or numbers and sizes of ovarian follicles but the possibility of an effect on follicle physiology remains.