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.