Journal of Andrology, Vol 5, Issue 2 87-92, Copyright © 1984 by The American Society of Andrology

JOURNAL ARTICLE

Administration of constant low doses of androgens to steers by silastic implant. Suppression of gonadotropins and peripheral conversion of androgens

R. I. Kennedy and N. C. Rawlings

Yearling Hereford calves approximately 300 kg in weight were castrated and assigned to one of six treatment groups receiving subcutaneous implants (3 implants, 0.5 cm diameter by 10 cm length, 10% steroid by weight) of either androstenedione (D); testosterone (T); 5 alpha-androstane-3 beta, 17 beta-diol (3 beta-diol); dihydrotestosterone (DHT); androsterone (A); or control (no steroid). Blood samples were obtained at half-hour intervals for eight hours one day prior to, and one week after, castration. The castration-induced elevation in FSH secretion was suppressed or modified by the DHT, T, and 3 beta-diol implants. LH levels were not significantly suppressed. The T implants elevated serum T concentrations; DHT implants elevated serum 5 alpha-androstane-3 alpha, 17 beta-diol (3 alpha-diol) and 3 beta-diol, but not DHT concentrations; 3 beta-diol implants elevated serum 3 beta-diol concentrations. The effects of D and A implants upon serum androgen concentrations were not statistically significant, although observations in vitro suggested an adequate release rate. These data imply that T and DHT, or metabolites of DHT, suppress FSH secretion and suggest that extensive peripheral androgen metabolism occurs.