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1: Theriogenology. 2004 Jan 15;61(2-3):311-27.

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Ultrasound and endocrine evaluation of the ovarian response to a single dose of 500 IU of eCG following a 12-day treatment with progestogen-releasing intravaginal sponges in the breeding and nonbreeding seasons in ewes.

Barrett DM, Bartlewski PM, Batista-Arteaga M, Symington A, Rawlings NC.

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A standard dose of 500 IU of eCG is commonly given to progestogen pre-treated anestrus ewes for induction of estrus. Twelve seasonally anestrus and 12 cyclic Western White Face ewes were treated for 12 days with intravaginal sponges impregnated with medroxyprogesterone acetate (MAP). In trials in both the breeding and nonbreeding seasons, six randomly selected ewes were given 500 IU of eCG at sponge removal to determine the effects of low dose of eCG on ovarian antral follicular dynamics and ovulation. Ultrasound scanning and blood sampling were done daily. Treatment with eCG did not have marked effects on antral follicular growth. All ewes ovulated, except for five of six control anestrus ewes. Luteal structures and progesterone secretion were confirmed in all but the control anestrus ewes. In the breeding season, peak progesterone concentrations were greater ($P < 0.05$) in eCG-treated compared to control ewes. Daily serum estradiol concentrations were greater in the periovulatory period in eCG-treated compared to control ewes (treatment-by-day interaction; $P < 0.05$), particularly in anestrus. Progestogen-treated ewes ovulated follicles from several follicular waves, in contrast to ovulations of follicles from the final wave of the cycle in untreated, cyclic ewes. Anestrus ewes exhibited more frequent follicular waves and FSH peaks compared to cyclic ewes after a progestogen/eCG treatment. In conclusion, 500 IU of eCG given after 12 days of progestogen treatment had limited effects on the dynamics of ovarian follicular waves. However, eCG treatment increased serum concentrations of estradiol during the periovulatory period, particularly in anestrus ewes; this probably resulted in the synchronous estrus and ovulation in anestrus ewes.

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