REGUMATE IN STALLIONS – Effects on Reproductive Performance

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Regumate® or altrenogest is a synthetic progestin approved for suppression of estrus in mares. It is also commonly used to help maintain pregnancy in mares determined to be at risk of pregnancy loss.

Regumate® is occasionally administered off-label to stallions in an attempt to suppress undesirable male behavioral characteristics that may interfere with training or athletic performance. A commonly asked question is whether or not Regumate® has adverse effects on reproductive performance in stallions. Progestins are known to inhibit pituitary luteinizing hormone (LH) secretion; in the male, LH stimulates Leydig cells of the testes to produce the testosterone required for spermatogenesis and libido.

Three controlled studies have been published regarding the effects of altrenogest administration on reproductive behavior, physiology, and semen characteristics of stallions. In one study, 15 stallions were administered altrenogest at twice the label dose for suppression of estrus in mares (i.e. 0.088 mg/kg of body weight or approximately 20 mls to a 1,000 lb or 450 kg stallion) once daily for either 150 days or 240 days, depending on the treatment group. Altrenogest treatment resulted in a dramatic suppression of LH concentrations within 8 days of the onset of therapy. Concentrations of testosterone in the blood of treated stallions also declined significantly during the treatment period.
Changes in reproductive behavior or libido were noted during altrenogest treatment and included an increased time to erection in the presence of a mare in heat, increased time to ejaculation during semen collection, and an increase in the incidence of ejaculation failure.

Altrenogest therapy was associated with a decrease in total scrotal width, which is an indicator of testicular size. Treatment was also associated with a decrease in daily sperm output and a decrease in the percentage of morphologically normal sperm in the ejaculate. In addition, some stallions exhibited a decrease in progressive motility of spermatozoa during altrenogest therapy.

Cessation of therapy after either 150 or 240 days resulted in an increase in blood levels of LH, total scrotal width, and daily sperm output. However, concentrations of testosterone in blood, libido, and percentage of morphologically normal spermatozoa in the ejaculate did not return to normal by the end of the observation period, which was 90 days after discontinuation of altrenogest therapy.

A subsequent study evaluated the effect of short-term altrenogest therapy (30 days) at

the label dosage (0.044 mg/kg or approximately 10 ml for a 1,000 lb/450 kg horse) on behavior and reproductive function in 4 stallions compared to 4 untreated controls. Treatment resulted in reduced hormone levels (LH, testosterone, estrogen conjugates and inhibin), minor alterations in stallion behavior, and no adverse effects on semen quality or quantity. Testosterone levels remained suppressed until the end of the observation period, which was out to 60 days after treatment was discontinued.

A third study evaluated the effects of altrenogest on reproductive parameters in young stallions. Five stallions between the ages of 2 and 4 years were administered altrenogest at a dose of 0.088 mg/kg (twice the label dose) once daily for eight weeks. Treatment resulted in decreased daily sperm production, a decrease in the percentage of morphologically normal sperm, and some alterations in breeding behavior. Again, some of these parameters did not return to normal within eight weeks after the end of treatment.

In summary, administration of altrenogest to stallions causes suppression of LH, testosterone, and other reproductive hormones. Short term treatment with the label dose of altrenogest for suppression of estrus in mares (0.044 mg/kg once daily) apparently has less adverse effects on behavior and semen parameters than prolonged administration of a higher dose (0.088 mg/kg once daily). Testosterone may remain suppressed for a prolonged period of time at either treatment dose. It should be noted that long-term effects of altrenogest administration on future testicular function are unknown. Owners and trainers should therefore use caution and discretion when contemplating the use of altrenogest in young performance stallions destined for a future reproductive career.

Stallion being collected