

Advanced Equine Reproduction Course

by

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Management of Twin Pregnancies

In the mare, twin embryos result from double ovulations, are detectible days 13 to 15 of gestation by transrectal ultrasonography, and is the predominant cause of non-infectious abortion. Breeding soundness examinations performed prior to breeding identifies the presence and location of endometrial cysts and thereby eliminates the possibility of misdiagnosing twin embryos. Alternatively, cysts may be detected prior to day 7 post-breeding as the conceptus has yet to descend the uterus. Several management options, each with an associated risk and benefit, exist. Nevertheless, the most successful management tool employed is early detection and manual (crushing) reduction of one embryo prior to fixation (day 16). Adjunctive medical therapy does not affect the clinical success of this procedure.

Mares diagnosed pregnant by day 16 and 17 with ipsilateral (equal or unequal size) twins, typically spontaneously abort one twin (respectively 73% and 99% of the time) prior to day 40. Spontaneous abortions are due to insufficient fetal membrane-uterine contact and therefore, inadequate placental oxygen, nutrition and waste exchange. The uterus responds to embryonic autolysis, by releasing prostaglandin that antagonizes luteal progesterone and may induce the remaining twin to abort. (Luteal progesterone (P4) maintains pregnancy through day 150 at 3-4 ng/mL or greater.) However, research data reports that the remaining embryo survives and develops without any problems. With this in mind, veterinarians

managing twin pregnancies diagnosed later than day 16 may choose to delay reduction procedures until day 25-30 as a reduction in the size of an embryo may suggest that natural reduction is underway and, additionally, a fetal heartbeat may be accurately detected by day 28. Periodic ultrasonographic examinations and video recordings can be a valuable aid in diagnosis and management of twins. Adjunctively, dietary restriction during this time has been reported to aid in natural regression.

When natural regression of ipsilateral twins does not occur (day 25 or later), the pregnancy may be reduced by either transcutaneous or transvaginal ultrasound-guided techniques both of which are difficult and are associated with low success rates in that the remaining embryo aborts. It is suggested, but not proven in research studies, that flunixin meglumine at labeled doses (anti-inflammatory and analgesia effect) as well as altrenogest be administered for a few days post-reduction. Weekly ultrasonography may be used to confirm viability of the remaining fetus, and supplemental altrenogest, also known as allyl-trenbolone, (Regumate) dosed at .044 -.033mg/kg orally every 24 hours may be used to maintain the pregnancy. Altrenogest, although not approved for pregnancy maintenance in the mare, has been used successfully and research studies have not identified any adverse effects on the developing fetus or future fertility problems of treated mares or their offspring to date. However, that is not to say that adversities do not exist. Furthermore, in spite of altrenogest supplementation, some mares may still abort and will come into estrus 4 to 5 day post-treatment and may be rebred at this time. Manual reductions performed after day 36 are complicated as the endometrial cups have formed and typically result with a loss of the remaining embryo. Therefore, the success of the reduction is low, the presence of the

endometrial cups prevent the onset of estrus and subsequent rebreeding until their regression.

Alternatively and depending upon the date in relation to the breeding season, both embryos may be aborted prior to the development of the endometrial cups using prostaglandin. Two prostaglandin products are currently available for approved use in the mare: dinoprost tromethamine (Lutalyse); and fluprostenol (Equimate). One intramuscular injection of Lutalyse (10 mg) may be administered to induce abortion in mares less than 35 days pregnant and estrus follows 4 to 5 days post-treatment. However, if Lutalyse is administered later than 35 days, more than one injection is required and mares usually do not go into estrus for several months later.

Other management options available for veterinary consideration during days 45 to 60 include surgical reduction by piercing the undesired embryo and transvaginal injection of hypertonic saline or potassium chloride solution. Both techniques are technically difficult and the remaining twin oftentimes aborts. When employing either of these options, mares do not cycle for several months as the presence of equine chorionic gonadotropin eCG (LH effects) prevents the onset of estrus for several months. Therefore, an entire breeding season may be missed.

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