

Table 1

Mean ($\pm$ S.D.) testicular blood flow (in cm/s) from fertile and infertile llamas

	TA PSV	TA EDV	MA PSV	MA EDV
Fertile	19.6 $\pm$ 5.4	6.4 $\pm$ 2.2	13.9 $\pm$ 3.1	8.6 $\pm$ 2.9
Infertile	16.5 $\pm$ 3.8	5.3 $\pm$ 1.8	10.4 $\pm$ 2.0	6.7 $\pm$ 0.3

leaving the testes. The pelvic region was then separated and digested in a 3% potassium hydroxide solution.

Fertile ($n = 8$) and infertile ($n = 4$) male llamas were sedated with butorphanol (15 mg IV and 15 mg IM) and positioned in sternal recumbency. A Philips iU22 ultrasound system was used to perform a color pulse-wave Doppler study of the suprastesticular (TA) and marginal arteries (MA) of both testes from each male using an L12-5 probe. Peak systolic (PSV) and end diastolic velocity (EDV) were averaged for each individual and compared between groups with a Student's *t*-test. Significance was defined as $P < 0.05$.

Results: Based on the vascular casting study, we found that the testicular artery originates from the ventral surface of the aorta, gives rise to an epididymal branch, and becomes very tortuous as it approaches the testis. Mean $\pm$ S.D. testicular blood flow from both groups of llamas is summarized in Table 1. Peak systolic velocity within the marginal arteries was higher in fertile males compared to infertile males ($P = 0.03$). There was no difference in blood flow in the other three parameters.

Conclusions: Determining testicular blood flow will assist in the diagnosis of infertility in camelids during breeding soundness evaluations.

Keywords: Blood flow; Camelid; Doppler ultrasonography; Testes; Vasculature

DOI: 10.1016/j.theriogenology.2007.05.007

EARLY PREGNANCY DIAGNOSIS BY PALPATION PER RECTUM: EFFECT OF NUMBER OF FETAL MEMBRANE SLIPS ON PREGNANCY LOSS IN DAIRY CATTLE

J.E. Romano^{1,a}, J.A. Thompson¹, D.C. Kraemer²

¹ Large Animal Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Texas A & M University, College Station, TX 77845, USA

² Veterinary Physiology and Pharmacology, College of Veterinary Medicine and Biomedical Sciences, Texas A & M University, College Station, TX 77845, USA

^aPresent address: Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, St. Paul, MN, USA.

In bovine practice, palpation per rectum [PPR] is one of the most frequent procedures performed by veterinarians and is the most frequent method used for pregnancy diagnosis. There is contradictory information regarding the potential deleterious effects of palpation per rectum for early pregnancy diagnosis on embryo/fetus viability. Earlier we reported no deleterious effect of palpation per rectum for pregnancy diagnosis between 30 and 60 days of pregnancy. However, under practical conditions, some females require more than one fetal membrane slip to establish a diagnosis. This additional manipulation could increase the potential deleterious effect of palpation per rectum. The objective of this study was to estimate the effect of the number of fetal membrane slips performed by palpation per rectum during early pregnancy diagnosis on pregnancy loss in dairy cattle. A controlled, randomized block-design experiment with two blocks, one by category and the other by number of embryos was conducted. Pregnant females (483) with a viable embryo detected by transrectal ultrasonography [TRUS] between 29 and 32 days after AI were randomly divided into three groups: control group [NPAL group; $n = 159$], palpation per rectum-1 [PAL-1 group; $n = 163$] and palpation per rectum-2 [PAL-2 group; $n = 161$]. The NPAL group was not submitted to palpation per rectum. The PAL-1 and PAL-2 groups were submitted to palpation per rectum using the fetal membrane slip technique once and twice between 34 and 41 days of pregnancy, respectively. The fetal membrane slip consisted of the compression of the pregnant uterine horn and allowing chorioallantoic membrane slip between the fingers. All the groups were submitted to two additional TRUS (Days 45 and 60 of pregnancy); Day 45 was used to monitor the potential immediate deleterious effect of PPR on embryo viability,

whereas Day 60 was used to monitor the potential delayed deleterious effect of PPR on fetus viability. The diagnosis of embryo/fetus death was made when there was no embryo/fetus heart beat, signs of embryo/fetus degeneration were observed, or when positive signs of pregnancy were absent in a cow/heifer previously diagnosed as pregnant. The overall embryo/fetus death between Days 30 and 60 was 12.8%. The percentage of pregnancy loss from Days 30 to 60 was 12%, 13.5% and 13% for NPAL, PAL-1 and PAL-2, respectively ($P > 0.05$). It was concluded, that palpation per rectum using one or two fetal membrane slips did not increase the pregnancy loss in dairy cattle.

Keywords: Cattle; Pregnancy diagnosis; Palpation per rectum; Safety

DOI: 10.1016/j.theriogenology.2007.05.008

EFFECTS OF DIETARY FEB-200™ IN LATE-GESTATION MARES GRAZING ENDOPHYTE-INFECTED TALL FESCUE

D.L. Christiansen¹, R.M. Hopper¹, N.M. Filipov¹, P.L. Ryan^{1,2}

¹College of Veterinary Medicine, Mississippi State University, MS, USA

²Department of Animal and Dairy Sciences, Mississippi State University, MS, USA

Consumption of toxic endophyte-infected tall fescue (E+) causes prolonged gestation, agalactia and dystocia in mares. In cattle, supplementing the diet with FEB-200™, a yeast cell wall extract (Alltech, Nicholasville, KY, USA), increased the rate of fecal excretion of ergot alkaloids and alleviated symptoms of fescue toxicity. Supplementation of FEB-200™ to early pregnant mares grazing E+ fescue pastures enhanced serum progesterone concentrations. The primary goal of this study was to determine the efficacy of FEB-200™ to alleviate symptoms of ergot alkaloid toxicosis in mares grazing E+ pastures during late-gestation. To this end, light-breed mares ($n = 16$) were matched by stage of gestation (256–304 days) and assigned to E+ (>90% infected) pastures in early February, and then placed on diets (10% crude protein commercial sweet feed) with FEB-200™ supplement (20 g/days; TRT, $n = 8$) or without the supplement (CON, $n = 8$). Mares were maintained on pastures through either Day 342 (first four pairs) or Day 335 (second four pairs) of gestation. Mean gestation age of CON and TRT mares at the onset of the study was 280 days. Blood samples were collected pre-E+ exposure, twice weekly while on pasture and twice

post-exposure for analysis of serum progesterone (P4) and plasma 3-4-dihydroxyphenyl acetic acid (DOPAC) concentrations. Udder development was scored (0 = no development to 4 = running milk) twice weekly and on day of removal from pasture. Urine was collected twice monthly for ergot alkaloid analysis and mares were concurrently examined (transrectal palpation and ultrasonography) to assess fetal well-being. Data were analyzed using ANOVA for repeated measures and expressed as mean $\pm$ S.E.M. One CON and one TRT mare foaled prior to removal from E+ pasture (Days 336 and 329, respectively). The TRT foal survived with moderate intervention; the CON foal was euthanized. All except one TRT mare had a 0 or 1 udder score at the time of removal and all required domperidone (~ 1.25 mg/kg BW; Equi-tox, Inc., Central, SC, USA) once removed from pasture. Mean gestation length for the CON mares was 349.9 days and 349.1 for the TRT mares. Of CON mares foaling after removal, five foals had failure of passive transfer (FPT, IgG < 400 mg/dL) one of which required intervention other than plasma administration. Of TRT mares foaling after removal, one mare had dystocia with loss of mare and foal, one foal died within 24 h of birth (high meconium impaction and *C. perfringens* infection), one foal had colic requiring intensive care, three had FPT requiring plasma only and two foals had partial FPT (IgG 400–800 mg/dL). Plasma DOPAC and serum P4 concentrations were similar for CON and TRT mares (5.8 ± 0.3 ng/mL versus 6.2 ± 0.3 ng/mL and 5.1 ± 0.2 ng/mL versus 5.5 ± 0.2 ng/mL), respectively. Only one TRT and none of the CON mares had the normal pre-partum rise in P4. Urinary ergot alkaloid content was 154.8 ± 9.6 and 130.5 ± 9.5 ng/mg creatinine for CON and TRT mares, respectively. In conclusion, there were no beneficial effects in mares supplemented with FEB-200™.

Keywords: Equine; Fescue toxicosis; Pregnancy; Yeast extract

DOI: 10.1016/j.theriogenology.2007.05.009