equine herpesvirus 1/4, botulism, rotavirus, plus or minus autogenous *Salmonella typhimurium* and *Clostridium perfringens* in the last 6 weeks of pregnancy, were enrolled. All foals were determined healthy and had adequate postnursing IgG. None received hyperimmunized plasma. Blood was drawn monthly and submitted to Kansas State University rabies laboratory to quantify antirabies neutralizing antibody via the rapid fluorescent focus inhibition test. Foals were allocated with a generalized, randomized block design, based on rabies titer at 1 month of age. Foals received a commercial combination EEE, WEE, WNV, tetanus, rabies vaccine beginning at either 4 or 6 months of age. Foals received a booster 30 days after their initial injection. Rabies antibody concentrations were analyzed to establish the rate of decline prior to and after vaccination immune responses. Prior to vaccination, geometric mean rabies titers were 3.5, 1.1, 0.6, and 0.4 IU/ml at 1, 2, 3, and 4 months of age, respectively. Through the first 4 months of life, antibody titer decline was 90%. At 4 months of age, 33/49 (67%) foals had rabies titer ≤ 0.5 IU/ml. The geometric mean postvaccination rabies titers were 0.8 and 1.0 IU/ml in foals that began initial vaccination series at 4 and 6 months of age, respectively. Postvaccination, 20/25 (80%) foals in the 4-months age group and 20/24 (83%) foals in the 6-months age group had rabies titer ≥ 0.5 IU/ml. In our study, the rate of rabies antibody declined over the first 4 months of life, indicating that most foals are expected to have a titer below 0.5 IU/ml prior to 4 months of age. The immune response to vaccination was similar between foals that started their immunization series at 4 months of age compared to those started at 6 months of age. future is unknown.

Keywords: Rabies, vaccination, titers, immunization, immunity

Prospective ultrasonographic evaluation of caudal placenta and cervix in pregnant mares in relationship to foaling outcomes and placental abnormalities

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Clinical diagnostic procedures to evaluate the late pregnant mare are largely limited to physical examination and ultrasonographic evaluation of the fetus as well as the combined thickness of the uterus and placenta (CTUP). The cervix of a pregnant mare is a key physical and immune barrier to contamination of the pregnant uterus from the vagina yet there is limited research that evaluated changes in the cervix, which might be indicative of potential problems during equine pregnancy. Objective was to evaluate changes in CTUP and mean cervical diameter (CX) determined by transrectal ultrasonography (Sonoscape S9 with 9.5-15 MHz linear probe; Seattle, WA), and the relationship of these parameters to subsequent foaling outcomes and placental abnormalities. The study was conducted in Thoroughbred mares in central Kentucky during 2017 (n = 112 mares), 2018 (n =109 mares), and 2019 (n = 139 mares). Mares were examined by 1 of 2 examiners on a monthly basis from 4 months gestational age (GA) until term (total examinations; n = 1810). At term, outcomes were classified as normal or abnormal foal and normal or abnormal placenta (based on observation of a fetal membranes inspection at the farm). Data were analyzed by a random-effects mixed model including mare as the random effect, gestational age as a covariate and foaling outcome, placenta as well as examiner as a fixed-effects (JMP ver 14.0). Correlations were evaluated by a Pearson's coefficient. The CTUP was higher (p = 0.001) in mares with abnormal placenta at term but was not related (p = 0.3) to foal outcome. The CTUP increased (p < 0.001) with GA and was affected (p < 0.001) by examiner. The CX increased (p = 0.05) in mares with abnormal foaling outcome but was not related (p = 0.2) to abnormal placenta at term. Again, CX increased (p < 0.001) with GA and varied (p < 0.001) with examiner. As noted, CX and CTUP increased with GA and were positively correlated (r = 0.26; p < 0.01). Our findings suggested that measurement of CX and CTUP in mares are related to foaling outcome and placental abnormalities at term, respectively. Future studies should examine the predictability of foaling outcomes in mares based upon prospective evaluation of these parameters.

Keywords: Mare, pregnancy, placenta, cervix, ultrasonography

Oocyte collection rate and in vitro embryonic development with low dose deslorelin in mares

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Equine assisted reproductive technologies have become increasingly popular throughout the past 20 years, especially ovum pick up (OPU) and intracytoplasmic sperm injection (ICSI). Successful production of in vitro embryos through OPU/ICSI often relates to the number of oocytes, but limited research has been devoted towards ovarian super stimulation for this purpose. This study aimed to determine if low doses of the gonadotropin releasing hormone agonist, deslorelin, (LDD) would increase number of follicles, increase number of oocytes collected or affect oocyte quality. Mares (n = 11, 5 - 13 years) were assigned for this study. Each mare served as her own control in a cross over design. All estrous cycles were monitored through routine transrectal ultrasonography and all visible follicles recorded. Routine transrectal vaginal aspiration was performed on mares in both groups at ~ 20 hours after ovulation induction treatment. For treated estrous cycles, when at least