

Follicular Aspiration or Deslorelin Treatment to Initiate Cyclicity in Transitional Mares

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Advancing the onset of cyclicity has long been a goal in the equine industry. Follicular aspiration has resulted in luteinization in cycling mares, and an earlier study from our lab (Klump et al., 2003) indicated it could advance the onset of cyclicity. The objective of this study was to more succinctly define selection criteria for follicular aspiration and to compare follicular aspiration to deslorelin treatment to initiate cyclicity in transitional mares. Thirty-six anestrus mares were assigned to one of three treatments (control, n=14; follicular aspiration, n=10; deslorelin, n=12). Control mares were monitored by palpation and ultrasonography twice weekly until ovulation was detected. The aspiration and deslorelin groups were monitored in the same manner twice weekly until a follicle ≥ 25 mm was identified, and then every other day until a follicle ≥ 35 mm and a uterine edema score ≥ 2 (on a scale of 0 to 3) was present. Transvaginal ultrasound guided follicular aspiration was performed in the aspiration group. In the deslorelin group a deslorelin implant was placed in the vestibular mucosa for 48 hr. After treatment, the ovaries were monitored every other day for luteal tissue formation as indicated by the appearance of a hyperechoic structure at the site where the follicle had been located. If luteal tissue was not formed after treatment, monitoring continued in the same manner and mares were retreated when the aforementioned criteria were met, until luteal tissue formation was observed. Plasma was obtained from each mare at each examination to determine progesterone concentration. The time from January 1 to the first rise in plasma progesterone >1 ng/mL was compared among groups by survival analysis using the Kaplan-Meier method. No significant differences were detected among the groups (113.0 ± 4.9 , 102.0 ± 6.7 and 110 ± 5.3 d (mean $\pm$ SE) for the control, aspiration and deslorelin groups, respectively, $P=0.33$). In our previous study (Klump et al., 2003) follicular aspiration shortened transition by 22.8 days, however the present study did not achieve similar results. Uterine edema was used as a criterion for aspiration in this study and some of the mares developed ≥ 35 mm follicles without uterine edema, which either postponed or precluded re-aspiration. Of the 10 aspiration-treated mares, 7 mares formed luteal tissue after aspiration, while 3 mares did not respond to the first aspiration and were not retreated because the uterine edema criterion was not met. In all, there were 17 missed aspiration opportunities due to lack of uterine edema. If the control mares were compared with the mares that responded to aspiration, there was a significant difference in the time of the first rise in progesterone (113.0 ± 4.9 vs. 93.9 ± 6.7 , control and aspiration, respectively, $P=0.045$). Of the 7 mares that responded to aspiration, 4 mares were treated twice and one mare three times, resulting in 1.6 ± 0.2 aspirations required per mare. Results of this and our previous study indicate that while follicular aspiration of a follicle >35 mm during late transition may be a means to shorten the transitional period, uterine edema should not be used as a criterion for the aspiration.

Keywords: transition, ovary, follicular aspiration, deslorelin, corpus luteum