Evaluation of an equine LH kit for prediction of ovulation

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Prediction of ovulation by measuring serum LH concentrations could be useful for timing insemination of mares when transrectal ultrasonography cannot be performed. Our objective was to evaluate the ability of an equine LH kit to predict ovulation in mares. Ovarian activity was monitored ultrasonographically, and serum was collected daily from six mares from the first day of behavioral estrus until 2 d post-ovulation. Serum samples from days -4 to 2 (Day 0 = ovulation) were analyzed in duplicates using an equine LH kit (Equine LH-Check®, Endocrine Technologies, Inc., Newark, CA, USA). Results (positive = serum LH concentration ≥ 2 ng/mL, or negative) were interpreted blindly by two operators. Agreement between operators, repeatability between duplicates, and day of first detection of a positive result were assessed. Positive and negative predictive value, sensitivity and specificity of the test for detecting ovulation within 24 h were calculated, and were 35, 94, 91.7 and 44.4%, respectively. Repeatability was moderate (74%) and agreement, high (97.4%). A positive result was first obtained 2.5 ± 1.2 d (mean ± SD) before ovulation, with all mares having high LH concentrations on days 0 to 2. While ovulation occurred in the face of high serum LH concentrations in all mares, a single positive result was not a reliable indicator of impending ovulation. However, a single negative result confirmed that ovulation had not occurred, or was not likely to occur within 24 h and breeding could be postponed.

Keywords: LH, ovulation, mare, prediction