

Accuracy of canine parturition date prediction from LH peak

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Accurate prediction of parturition is valuable in managing canine pregnancy and parturition. The gestation length of the dog varies considerably depending on how it is defined. Gestation can be measured based on breeding dates, cytologic estrus and diestrus based on vaginal cornification, date of ovulation (which cannot be measured by standard methods), or dates of hormonal changes, most commonly progesterone (P4) and luteinizing hormone (LH).

We sought to determine by retrospective analysis if using a combination of pre-breeding progesterone and LH levels would narrow the window and increase the accuracy of prediction of parturition date using the Witness® LH test (Synbiotics, Kansas City, MO, USA) a rapid immunomigration (RIM) test.

Serial serum samples were collected from 66 bitches (consisting of four breeds including Labrador retriever, golden retriever, German shepherd, and Labrador-golden crosses) for a total of 98 ovulation cycles. P4 levels were measured on samples every other day by radioimmunoassay (RIA) or chemiluminescent immunoassay (CLIA) through the Cornell University Diagnostic Laboratory. An in-house Witness® LH test was performed on saved serum samples from the date when P4 rose to ≥ 1.5 ng/ml and was at least twice the baseline progesterone level. Day 0 (d0) was defined as the day serum tested positive for LH on the in-house LH test. The average concentration of P4 on the day of the LH surge was 1.97 ± 0.66 ng/ml. Dogs were bred on d3 and d5 or d4 and d6. The predicted parturition date, 65 days following the day of the LH rise (d65), was compared to actual parturition date, the day the first pup was delivered. We determined that the accuracy of parturition date prediction within a ± 1 and ± 2 day interval was 82 and 100%, respectively and that accuracy was not affected by breed or litter size. A previous study found an accuracy of parturition prediction within ± 1 , ± 2 and ± 3 days using prebreeding serum P4 alone to be 67, 90, and 100%, respectively.¹

Keywords: Canine, LH surge, pregnancy, parturition, progesterone

Reference

1. Kutzler M, Mohammed HO, Lamb SV, et al: Accuracy of canine parturition prediction from the initial rise in preovulatory progesterone concentration. *Theriogenology* 2003;60:1187-1197.