FPIN's Help Desk Answers

Intercontraction Intervals for Predicting Timing of Labor Evaluation

Richard Brown, DO, and Diane J. Madlon-Kay, MD, MS
University of Minnesota Medical Center Family Medicine Residency, Minneapolis, Minnesota

Clinical Question

Does the time between contractions help predict when a pregnant woman at term should present for labor evaluation?

Evidence-Based Answer

Women at term who have at least 12 contractions per hour are more likely to be diagnosed with active labor within 24 hours. A reduction in the interval between contractions is associated with the onset of active labor. (Strength of Recommendation: C, based on prospective cohort trials.)

Evidence Summary

A 2007 prospective cohort study evaluated women presenting to a labor and delivery triage unit with contractions to determine whether the intercontraction interval was predictive of progression to labor.[1] Participants were 36 to 41 weeks' gestation and less than 4 cm dilated, and had intact membranes and no complications that would influence intervention (n = 768). They were instructed to present for labor evaluation when contractions occurred five minutes apart for at least one hour. Active labor was diagnosed when cervical dilation was at least 4 cm. The primary outcome was admission for active labor within 24 hours of presenting to triage. On initial presentation, contraction frequency was at least 12 per hour in 352 women (46%) and fewer than 12 per hour in 416 (54%). Active labor was diagnosed in 56% of women with at least 12 contractions per hour on initial presentation vs. 28% of those with fewer than 12 contractions per hour ($P < .001$). Over the next 24 hours, 76% of women with at least 12 contractions per hour were diagnosed with active labor compared with 52% of those with fewer than 12 contractions per hour ($P < .001$). The positive predictive value for active labor in women with at least 12 contractions per hour was 56% at initial presentation (95% confidence interval [CI], 51% to 61%) and 76% (95% CI, 71% to 80%) within 24 hours.

A 2005 prospective cohort study evaluated 423 consecutive pregnant women presenting to two Italian hospitals with uterine contractions to determine whether symptoms such as more frequent contractions were related to labor onset.[2] Collected data included decreasing interval between uterine contractions, which was not explicitly defined. Labor onset was determined retroactively by the study coordinator. Multivariate analysis showed that a reduction in the intercontraction interval was positively associated with active labor (odds ratio = 1.4; 95% CI, 1.1 to 1.9).

A 2016 systematic review examined definitions of labor onset.[3] Of the 62 studies identified, 71% referenced regular painful contractions in the definition of onset of labor, and 19% mentioned frequency of contractions (typically at least 12 per hour).

Address correspondence to Diane J. Madlon-Kay, MD, MS, at madlo001@umn.edu. Reprints are not available from the authors.

References

1. Pates JA, McIntire DD, Leveno KJ. Uterine contractions preceding labor. *Obstet Gynecol*. 2007;110(3):566-569.
2. Ragusa A, Mansur M, Zanini A, et al. Diagnosis of labor: a prospective study. *MedGenMed*. 2005;7(3):61.
3. Hanley GE, Munro S, Greyson D, et al. Diagnosing onset of labor: a systematic review of definitions in the research literature. *BMC Pregnancy Childbirth*. 2016;16:71. ■

Help Desk Answers provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (http://www.cebm.net).

The complete database of evidence-based questions and answers is copyrighted by FPIN. If interested in submitting questions or writing answers for this series, go to http://www.fpin.org or e-mail: questions@fpin.org.

This series is coordinated by John E. Delzell Jr., MD, MSPH, Associate Medical Editor.

A collection of FPIN's Help Desk Answers published in *AFP* is available at http://www.aafp.org/afp/hda.

Author disclosure: No relevant financial affiliations.