Inducing labor with drug vaginally shows benefits in study

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Labor induction with vaginal misoprostol during childbirth achieves vaginal delivery rates similar to the oral alternative while significantly reducing the need for oxytocin, the most commonly used labor-inducing

drug, UT Southwestern Medical Center researchers report.

The findings, published in *Obstetrics & Gynecology*, highlight the potential benefits of standardized labor management to provide safer, more streamlined induction methods for women at term. This research addresses a long-standing challenge in obstetrics, where a lack of standard guidelines often leaves induction decisions dependent on variables such as professional expertise, institutional environment, and patient-specific considerations.

"Obstetricians have very little high-quality evidence to guide the practice of labor induction," said study leader Emily Adhikari, M.D., Assistant Professor of Obstetrics and Gynecology at UT Southwestern and Medical Director of Perinatal Infectious Diseases at Parkland Health.

The study is the second of two large labor induction trials conducted in recent years at Parkland Health, which has one of the nation's busiest maternity wards. Dr. Adhikari said Parkland maintains among the best low-risk cesarean section rates in the U.S.

Studying the records of over 2,500 pregnant patients with gestational ages of at least 37 weeks, the researchers compared vaginal and oral misoprostol induction protocols, prioritizing vaginal delivery as the primary outcome. Secondary outcomes included assessing time to delivery, oxytocin requirement, and adverse maternal and neonatal effects.

Labor induction presents inherent risks, including a higher likelihood of C-section, particularly for women without prior vaginal deliveries. Given the inconclusive findings of previous studies and the absence of a standardized approach for vaginal delivery, this research provides essential insights into the efficacy of different induction methods.

The results showed comparable rates of vaginal delivery when vaginal and oral misoprostol are administered. However, the use of a vaginal misoprostol protocol decreased the need for oxytocin to induce and resulted in fewer cases of tachysystole—a condition in which excessive uterine contractions occur in association with fetal heart rate abnormalities.

Reducing reliance on oxytocin, an intervention that requires intensive nursing resources, has significant implications for enhancing patient care amid evolving health care challenges such as staffing shortages exacerbated by the COVID-19 pandemic. A standardized approach to labor management also allows measurement of these important outcomes, the authors said.

"This study provides the strongest evidence to support a standardized approach to labor management, yielding a 78% vaginal delivery rate from inductions at term among individuals with intact membranes and an unfavorable cervix," Dr. Adhikari said.

Helping inform the refinement of induction standards, the findings highlight the importance of continued research to improve maternal and neonatal outcomes, she said.

"Our mission in the Department of Obstetrics and Gynecology at UTSW is to train highly skilled, competent obstetrician-gynecologists using the best possible evidence and safest practices to achieve the best possible patient outcomes," Dr. Adhikari said.

Other UTSW researchers in the Obstetrics and Gynecology Department who contributed to this study include Julie Lo, M.D., Professor; David B. Nelson, M.D., Associate Professor, Division Chief of Maternal-Fetal Medicine, and Medical Director of Maternal-Fetal Medicine at Parkland Health; Catherine Spong, M.D., Chair and Professor; and Donald

McIntire, Ph.D., Professor. Jennifer McGuire, Pharm.D., Pharmacy Manager for Women & Infants Specialty Health (WISH) and Surgical Services at Parkland Health, also contributed.

More information: Emily H. Adhikari et al, Vaginal Compared With Oral Misoprostol Induction at Term, *Obstetrics & Gynecology* (2023). DOI: 10.1097/AOG.0000000000005464

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