FPIN's Clinical Inquiries

Does Performing Dating Ultrasonography Before a First-Trimester Uterine Evacuation Improve Outcomes or Safety?

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Clinical Question

Does performing dating ultrasonography before a first-trimester uterine evacuation improve outcomes or safety?

Evidence-Based Answer

No. Routine use of ultrasonography before a first-trimester abortion is not necessary. (Strength of Recommendation: B, systematic reviews and retrospective cohort studies.) In patients seeking medical or surgical abortion in the first trimester, date of the last menstrual period (LMP) alone can appropriately determine gestational age for treatment (before 63 to 90 days' gestation) in 93.8% to 97.6% of patients. Bimanual examination and LMP together accurately determine candidacy for treatment in 98.4% of patients. Ultrasonography does not appear to affect the rate of missed ectopic pregnancies or reduce incomplete abortions or ongoing pregnancy rates.

Evidence Summary

ULTRASONOGRAPHY ADDS LITTLE TO DECISION-MAKING

Two large cohort trials compared LMP and bimanual examination to ultrasonography for estimation of gestational age in patients presenting for pregnancy termination. A prospective cohort trial (n = 4,484) enrolled pregnant patients in the United States who were seeking pregnancy termination with a suspected gestational age of less than 63 days (treatment date cutoff) based on LMP.[1] Patients who had previous ultrasonography or suspected molar or ectopic pregnancies were excluded. All patients underwent bimanual examination and ultrasonography to confirm gestational age at the time of enrollment. The primary outcome was whether patients with pregnancies greater than 63 to 78 days' gestation would be inappropriately offered medical abortion if LMP alone or LMP plus bimanual examination were used to date the pregnancies compared with using ultrasonography. A certain LMP alone was able to accurately determine candidacy for treatment in 97.6% of patients compared with ultrasonography. LMP plus bimanual examination together accurately determined candidacy for treatment in 98.4% of patients vs. ultrasonography. Approximately 59 sonograms would need to be performed to correctly determine candidacy for medical abortion (based on gestational age) for one additional patient compared with LMP plus bimanual examination.

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A retrospective cohort trial in Mexico (n = 43,219) compared gestational age based on reported LMP to gestational age based on ultrasonography in patients undergoing first-trimester abortion.[2] LMP overestimated gestational age by a mean of one day compared with ultrasonography. Using cutoffs of 70 days for medical abortion and 90 days for first-trimester abortion eligibility, using LMP alone, 93.8% and 96% of patients would have been correctly determined to be eligible for medical abortion and first-trimester abortion, respectively. Based on these findings, 16 sonograms would need to be performed to correctly determine candidacy for medical abortion (based on gestational age) for one additional patient compared with use of LMP alone, and 25 sonograms would need to be performed to correctly determine candidacy for first-trimester abortion for one additional patient compared with LMP alone.

ULTRASONOGRAPHY DOES NOT SIGNIFICANTLY IMPROVE SAFETY

A systematic review in 2019 analyzed three retrospective cohort studies of patients from the United States and Europe (N = 3,785) evaluating the impact of ultrasonography on the safety of uterine vacuum aspiration and medical abortion.[3] Included patients requested abortion in the first trimester of pregnancy with gestational age determined by LMP or ultrasonography. Researchers compared outcomes of cases that used ultrasonography with cases that did not, evaluating for missed diagnoses of ectopic pregnancy, ongoing pregnancy, and complete abortion without the need for repeat surgical intervention. The rates of missed diagnoses of ectopic pregnancy (relative risk [RR] = 0.26; 95% CI, 0.03 to 2.12), ongoing pregnancy (RR = 1.06; 95% CI, 0.34 to 3.34), and complete abortion without the need for surgical intervention or medical abortion (RR = 1.0; 95% CI, 0.98 to 1.02) did not differ between patients who had abortions before or after ultrasound-confirmed evidence of an intrauterine pregnancy.

A retrospective cohort trial (n = 11,381) examined the utility of routine ultrasonography in detecting ectopic pregnancy in patients requesting an abortion at an abortion clinic in Scotland over a five-year period.[4] The clinic database was searched for patients with outcomes of ectopic pregnancy or pregnancy of unknown location. Records were analyzed for presence of symptoms at the time of presentation (unilateral abdominal pain or bleeding); development of symptoms during the period of clinical care; presence of significant risk factors for ectopic pregnancy (previous ectopic pregnancy, history of pelvic inflammatory disease, and intrauterine device in place); ultrasound findings; and management of the ectopic pregnancy or pregnancy of unknown location. A total of 29 patients were found to have ectopic pregnancy or pregnancy of unknown location (0.25%). Thus, 400 sonograms would need to be performed to detect one ectopic pregnancy.

Recommendations from Others

In 2011, the Royal College of Obstetricians and Gynaecologists stated that routine pre-abortion ultrasound scanning was unnecessary for medical or surgical abortion.[5] It additionally noted that there was no direct evidence that routine ultrasonography improved safety or effectiveness of abortion procedures (based on well-conducted clinical studies without randomized controlled trials). In 2012, the World Health Organization made a "strong" recommendation that the use of routine pre-abortion ultrasound scanning was not necessary,[6] but it noted that the quality of evidence was low. In 2020, the American College of Obstetricians and Gynecologists stated that ultrasonography was not necessary before medical abortion in asymptomatic patients with regular menstrual cycles and certainty of their LMP (based on observational and nonrandomized intervention studies).[7]

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