

Objectives: We assessed the risk of perioperative anesthesia-related complications among obese and nonobese women undergoing outpatient surgical abortion under deep sedation.

Methods: We performed a retrospective cohort study of all surgical abortions (through 22 6/7 weeks) at an outpatient abortion clinic between 2011 and 2013. Women receiving intravenous deep sedation were included. Obesity status was determined using the World Health Organization criteria. The primary outcome was the rate of perioperative pulmonary complications, defined as intubation, pulmonary aspiration or hospital transfer for an anesthesia-related indication. The use of opioid reversal (naloxone) was assessed as a secondary outcome measure. Univariate and multivariate analysis were performed with adjustment for confounding factors.

Results: A total of 9348 abortions were performed during the study period; 5579 patients received deep sedation of whom 1406 (25.2%) were obese; 1707 (30.6%) were in their second trimester, and 852 (15.3%) were at 17 weeks' gestation or more. No patients experienced a primary outcome measure. Naloxone use occurred among 13 (0.2%) patients and did not occur more frequently among obese patients (0.14% vs. 0.26%, $p=.54$), in second-trimester procedures (0.41% vs. 0.15%, $p=.08$), or in procedures performed at 17 weeks or later (0.47% vs. 0.19%, $p=.12$). Naloxone use was associated only with fentanyl doses higher than 200 mcg (0.82% vs. 0.13%, $p=.002$) and remained significant when we controlled for confounding factors (aOR, 4.46; 95% CI, 1.24–16.09).

Outcomes: Anesthesia complications among women undergoing surgical abortion are rare and do not occur more frequently among obese women or in procedures performed at 17 weeks' gestation or later.

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P10

Effects of digoxin and delayed dilation and evacuation on fetal tissue quality: maximizing opportunities for research participation

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Objectives: A majority of women undergoing abortion approve the use of fetal tissue for research. The effects of digoxin injection and delayed dilation and evacuation (D&E) on fetal tissue quality are unknown. The objective of this study was to determine whether fetal tissues are usable for research after digoxin injection and delayed D&E.

Methods: We conducted a descriptive study of fetal tissues exposed to digoxin 1 day before D&E, compared with samples from fetuses not exposed to digoxin and delayed D&E. Histological analyses included hematoxylin and eosin (H&E) for cell morphology, Ki67 staining for cell proliferation and TUNEL cell death assay. Standard primary fibroblast and astrocyte cultures were attempted. Nucleic acid extraction and quality assays were performed.

Results: Tissue was obtained from six 117–178.5 day postconceptional-age fetuses injected with digoxin 22.5–27.5 h before D&E. The tissues had abnormal cell morphology, increased apoptosis and decreased cell proliferation compared with the controls. Fibroblast culture was successful from two of three fetuses. High-quality genomic DNA was obtained in all cases. RNA integrity number (RIN) scores (brain, lung, muscle) ranged from 5.0 (partially degraded) to 7.6 (suitable for RNA analysis).

Outcomes: Although fetal tissues obtained after digoxin exposure and delayed D&E had abnormal cell morphology, poor cell viability and variable RNA quality, high-quality genomic DNA was consistently isolated. The independent effects of digoxin exposure versus delayed D&E remain to be determined.

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P11

Estimated versus quantitative blood loss during dilation and evacuation

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Objectives: Estimations of blood loss are often inaccurate in surgical procedures. Blood loss is typically estimated at the time of dilation and evacuation (D&E), and the accuracy of those estimations is unclear. We aim to compare the mean measured blood loss versus estimated blood loss at the time of D&E.

Methods: Using a standard protocol, we measured blood loss for all D&E procedures performed between 16 and 24 weeks at one abortion clinic over 1 month. The protocol involved weighing blood-containing items and measuring blood captured in the D&E tray. Providers recorded estimated blood loss before weighing or measuring blood. We compared means by gestational age range using a t test and report a Pearson's correlation coefficient.

Results: We collected data on 64 patients. Mean estimated versus measured blood loss was significantly different for each gestational age group: 76 ml versus 212 ml at 16–17 weeks, 97 ml versus 249 ml at 18–19 weeks, 179 ml versus 376 ml at 20–21 weeks and 203 ml versus 595 ml at 22–24 weeks ($p<.02$ for all).

Median estimated versus measured blood loss was 75 ml versus 153 ml at 16–17 weeks, 75 ml versus 190 ml at 18–19 weeks, 150 ml versus 310 ml at 20–21 weeks, and 175 ml versus 549 ml at 22–24 weeks. A strong linear correlation between estimated and measured blood loss ($r=0.7$) weakened after exclusion of three cases with blood loss of more than 900 ml ($r=0.3$).

Outcomes: Providers consistently and significantly underestimate blood loss from D&E. Further research is needed to correlate blood loss with clinical outcomes.

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P12

State law requiring FDA protocol for medication abortion is associated with increased need for additional interventions

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Objectives: We examine whether a 2011 Ohio law requiring use of the FDA-approved protocol for medication abortion had an impact on the need for additional interventions, clinical visits or the social and demographic composition of patients obtaining this type of abortion.

Methods: We abstracted data from medication abortion charts at four Ohio facilities 1 year before implementation of the law and 3 years after. We estimated the likelihood of requiring additional intervention and the average number of visits before and after the law, while controlling for facility characteristics and potential confounders. We also examined differences in the social and demographic composition of patients in the pre- and postlaw periods.

Results: In abstracted charts ($n=3473$), patients in the postlaw period were twice as likely to require additional intervention as those in the prelaw period (10.6% vs. 5.0%, OR, 2.2; $p<.001$). The most common subsequent intervention in both periods was an additional misoprostol dose. Additional interventions led to more follow-up visits; twice as many women in the postlaw period had two or more follow-up visits (6% vs. 3%, $p<.01$). Women in the postlaw period were more likely to be older, White, privately insured and college educated than women in the prelaw period.

Outcomes: Ohio's law requiring use of the FDA-approved protocol for medication abortion is associated with increased need for additional interventions and, consequently, additional visits to the abortion provider.

The law requires health care providers to offer a less effective regimen with increased burdens for patients and providers.

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P13

First-trimester surgical abortion practices in the United States

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Objectives: We assessed first-trimester surgical abortion practices of US providers and changes in practices since 2002.

Methods: We conducted our third cross-sectional survey of US abortion facilities identified via publicly available resources ($n=703$) from June through December 2013, which included questions on surgical abortion procedures.

Results: Some 383 (54%) of facilities participated, and 259 clinicians responded to the survey about first-trimester surgical abortions. The majority were obstetrician–gynecologists (74%), female (64%) and younger than 50 (56%). Most clinicians (80%) used manual vacuum aspiration, up from 49% in 2002. Preprocedure cervical ripening was less common at 11 weeks (33% of providers used misoprostol) than at 12 weeks (66%) and at 13 weeks (77%); most providers (66%) used the same regimen for multiparous women. Almost half (48%) of providers routinely premedicated patients with anxiolytics (up from 35%); this practice was more common among providers aged 66 and older than among younger providers (51% vs. 34%, $p=.08$). Other practices were even more uniform, including ultrasound dating (98%, up from 91% in 2002), nonmedication pain-relieving measures (85%), routine tissue examination (92%), postoperative antibiotic provision (85%) and contraceptive provision (including the IUD, 74% and implant, 61%). We found low utilization of routine intraoperative (12%, vs. 21%) and postoperative (10%) ultrasound. Obstetrician–Gynecologists were more likely to use intraoperative ultrasound than family medicine providers (14% vs. 3%, $p=.07$).

Outcomes: Most perioperative practices for first-trimester abortions were uniform. Use of MVA and postprocedure LARC availability has increased since 2002. Remaining variation in practices represents a lack of evidence-based guidelines.

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P14

Clinic capacity for referrals and proximity to abortion services among Title X family planning clinics: rural–urban differences

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Objectives: We examined counseling and referrals for adoption and abortion in Title X family planning clinics and compared clinic capacity for referral and proximity to abortion services by rural/urban status.

Methods: We analyzed referral and proximity data from a larger study of 558 Title X family planning clinics in 16 Great Plains and midwestern US states collected from June to September 2012. We performed descriptive analyses to assess the proportion of clinics that provided counseling on abortion and adoption services and the proximity of abortion services to clinics by rural/urban status.

Results: Nearly all (97%) surveyed clinics reported referring patients to adoption services upon request; however, only 84% of clinics reported

referring clients to abortion services upon request. Clinics located in rural areas were more likely than those located in urban areas to report that the closest first-trimester provider (47% vs. 7%, $p<.001$) and the closest second-trimester provider (40% vs. 13%, $p<.001$) was located 101 or more miles away. Rural clinics were more likely than urban clinics to report not knowing where the closest first-trimester (15% vs. 6%, $p<.001$), second-trimester (38 vs. 22%, $p<.001$) and medication (35% vs. 22%, $p<.001$) abortion providers were located.

Outcomes: Title X clinics' abortion referral capacity differs by rural/urban status. These findings may reflect the increasingly prohibitive environment for abortion services in the midwest. Potential interventions include better education about abortion referral for family planning providers and telemedicine services for rural providers.

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P15

Differential effects of method-specific influences and knowledge on attitudes across contraceptive methods

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Objectives: We assessed the differential relationships between spheres of influence, knowledge and attitudes toward specific contraceptive methods.

Methods: This analysis draws from a survey of 167 women presenting for abortion addressing sexual and contraceptive health histories, contraceptive knowledge, contraceptive attitudes and spheres of influence and perceived barriers to use. We used descriptive statistics and multiple linear regression modeling to examine the differential relationships between multiple spheres of influence (e.g., one's own experience, family, provider, etc.) and attitudes toward specific methods, namely, the IUD, implant, injectable and oral contraceptives.

Results: There were no significant differences in women's knowledge or attitudes regarding the IUD, pill and injectable, but knowledge and attitude scores were significantly lower with respect to the implant (mean knowledge=1.3; 95% CI, 1.0–1.5; mean attitude 3.3; 95% CI, 2.8–3.9). No significant differences in the number of influences were observed among the four methods. Multiple linear regression models showed that after we adjusted for age, race, education and knowledge, the number of influences on opinion about a specific contraceptive method were positively associated with attitudes toward the implant (0.80, $p<.05$) and marginally significant for the IUD (0.70, $p<.10$), with no such associations for the pill or injectable.

Outcomes: Findings show that for lesser known but highly effective methods, having multiple domains of influence regarding that method are associated with increasingly positive attitudes toward the method, suggesting potential avenues to increase uptake. These findings support greater inquiry into network effects surrounding LARC methods and broadening efforts to promote implants and IUDs.

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P16

Evaluating the psychometric properties of two decisional conflict scales among women seeking abortion in Utah

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Objectives: Decisional conflict has been hypothesized as an important factor influencing women's abortion decision making and coping. However, minimal research measures this construct among women seeking abortion.