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A qualitative study of digoxin injection before dilation and evacuation

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ABSTRACT

Objective: We sought to qualitatively understand patients' experiences with digoxin as a step before dilation and evacuation (D&E).
Study design: We recruited English-speaking women from one abortion health center where digoxin is routinely used before D&E. We interviewed participants one to three weeks after the D&E about physical and emotional experiences with digoxin and understanding of its purpose. Using grounded theory, we analyzed transcripts iteratively, identifying themes from interviews; we stopped recruitment when we reached thematic saturation.
Results: We conducted 20 interviews and participants described mixed experiences. Three overarching themes from the qualitative interviews were: (1) physical and emotional discomfort; (2) varied understanding of digoxin's purpose and effects; and (3) reassurance. Most participants described significantly negative experiences with digoxin; however, many participants also described positive aspects of the injection intermingled with those negative experiences.
Conclusions: Participants' experiences with digoxin before D&E were both polarized and nuanced. While participants were largely clear about digoxin's action, they were much less clear about the reason for its use.
Implications: Both the clinical purpose for and patients' experiences with digoxin before D&E are complicated. Providers who continue to use digoxin should consider patient preferences in how they offer digoxin, and consider tools to ensure patient understanding.

1. Introduction

In the United States, approximately 105,000 second-trimester abortions are done every year [1]. The practice of inducing fetal demise before dilation and evacuation (D&E) abortion increased following the Federal Abortion Ban taking effect after it was upheld by the U.S. Supreme Court in 2007 [2–4]. Increased uptake of trans-abdominal injection to induce fetal demise before D&E may be attributed to providers' concerns about legal retaliation in an environment increasingly hostile towards abortion providers [5]. In addition, some providers believe that inducing fetal demise results in an easier and faster procedure [6,7], despite one randomized controlled trial showing no difference [8].

Digoxin is the most common agent used before D&E abortions to induce fetal demise [9]. The risks associated with digoxin have been well documented and include nausea and vomiting, increased risk of hospital admission in the period between injection and the scheduled D&E, and increased risk of extramural delivery [8,10]. Although digoxin is relatively safe, the medical community remains divided about the routine use of digoxin in abortion care [11,12].

Patients' experiences with digoxin are particularly relevant when considering whether it should be administered, yet data regarding patient preference for and experiences with digoxin are limited. One study indicated that some women choose not to receive digoxin before D&E because of risks and discomfort with it [13], while other studies have reported increased patient satisfaction [6,8,9,13]. The manner in which patients are counseled about the reasons for digoxin before D&E is unknown and likely influences their responses about satisfaction [8].

We conducted a qualitative study among patients who received a digoxin injection before D&E. Specifically, we explored the role of counseling prior to the digoxin administration, patient understanding of induction of fetal demise before D&E, and patient experience.

2. Materials and methods

We approached all English-speaking women presenting to a Planned Parenthood health center in California for D&E abortion between 18 weeks 0 days and 23 weeks 6 days gestation. Transabdominal digoxin injection is used before all procedures in this gestational age range at this facility, and the majority of injections are intrafetal versus intra-amniotic. Women were eligible to participate if they

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were at least 18 years old, English-speaking, and in the aforementioned gestational age range. We included all women fitting the above criteria regardless of indication or reason for termination. Health center staff provided information about the study to all eligible women either before or after the digoxin injection and interested patients provided their contact information. We consented participants over the phone and conducted interviews within three weeks of the D&E. We recruited participants from October 2015 to December 2016.

At this health center, at the time of our study, registered nurses and physicians answered questions about digoxin after the patient reviewed the digoxin injection consent form. The physician performing the procedure could also respond to questions that went beyond the scope of the consent form. Standard counseling at the health center described digoxin injection as a common heart medicine that could be used to stop the fetal heartbeat before an abortion. The counseling described the injection as a thin needle inserted into the amniotic fluid or the fetus itself. Counseling includes a description of the benefits of digoxin as: decreasing the risk of a doctor or nurse violating the federal abortion ban, decreasing risk of live birth, and helping some women by knowing that the fetus demised before the in-clinic abortion. RNs included discussion of risks as well as side effects including: pain and discomfort during injection, and bruising at injection site, leakage of amniotic fluid, nausea, vomiting, diarrhea, and cramping.

We conducted 20 to 40 minute, semi-structured, qualitative phone interviews with all participants. Interviews focused on physical and emotional experiences with the digoxin injection, experience with counseling related to the injection and fetal demise, and understanding of digoxin's purpose. We recorded and transcribed the interviews. We also collected demographic data such as age, gestational age, and race/ethnicity from participants. We obtained approval from the Committee on Human Research at University of California San Francisco and we sent participants a $20 gift card in the mail after completing the interview.

We coded interviews using grounded theory analysis as they were completed [14], modifying a code list as interviews progressed. Two investigators (JK and BM) coded all transcripts in a rolling and iterative manner, adjusting coding to resolve discrepancies throughout data collection. We expanded and collapsed themes as we added more data. We continued to enroll participants and conduct interviews until we achieved thematic saturation, which the two coders agreed occurred with 20 interviews. We used Atlas.ti software program to organize and code the qualitative data.

3. Results

During the study period, 83 interested patients agreed to be contacted regarding this study. Of those 83, we reached 20 (24%) by phone, all of whom consented to participate and completed the qualitative interview. Characteristics of the study participants are represented in Table 1. Sixteen (80%) participants reported significant negative experiences with the digoxin injection, which included the following codes: discomfort with the injection itself or the idea of the injection, the injection was more painful than expected, fear of needles, the injection made the abortion harder to deal with, shock about discovering that this injection would be part of their abortion, discomfort with carrying a demised fetus, and participants saying they would not choose digoxin in subsequent abortions if given a choice. Despite these negative experiences, most participants (n=14, 70%) suggested that the digoxin injection was better than they had expected and most (n=15, 75%) claimed that they would choose to receive the medication again, even if it were not routine. (See Table 2.)

Patients' specific experiences with digoxin injection before D&E abortion were varied. Three overarching themes emerged from the qualitative interviews, including (1) physical and emotional discomfort, (2) varied levels of understanding of digoxin's purpose and effects, and (3) reassurance.

Table 1
Demographic characteristics of women who received digoxin injection before second trimester abortion

	N=20
Age (years)	24±5.9
Race/ethnicity	
Hispanic	8 (40)
African American	6 (30)
Caucasian	3 (15)
Other (mixed race or Pacific Islander)	3 (15)
Number of previous pregnancies	
0	10 (50)
1-2	5 (25)
≥3	5 (25)
Number of previous abortions	
0	14 (70)
≥1	6 (30)

All data are presented as n (%) or mean ± standard deviation.

3.1. Physical and emotional discomfort

During and soon after the digoxin injection, participants described tangibly experiencing fetal demise. One participant explained that she was able to feel fetal movement decrease over the few hours following the injection, an experience that was very difficult emotionally (Table 3, quote 3.1). Others felt that watching the injection on the ultrasound (which is offered as an option, but not compulsory) and knowing its effect made the loss of the pregnancy more poignant and painful (Table 3, quote 3.2).

Some participants expressed difficulty during the time between fetal demise and the D&E, and felt disturbed by the thought of carrying a demised fetus (n=9, 45%; Table 3, quotes 3.3, 3.4). The digoxin injection caused difficulty for them as they felt that an abnormal event was occurring – that something inside of them was not supposed to be there anymore, and that was worse than having a non-demised pregnancy up until the point of D&E.

Many participants reported difficulty with the injection itself (n=15, 75%) and reported a fear of needles and shots in general (n=11, 55%), specifically that the needle used for the digoxin injection was larger than they expected, and that the injection was painful (Table 3, quote 3.5). For one participant, the only issue she had with digoxin was its route of administration and the pain of the injection (Table 3, quote 3.6).

3.2. Varied understanding of digoxin's effect and the reason for its use

Most of our participants (n=17, 85%) correctly reported that digoxin's intended effect was to stop the fetus' heartbeat. Those who did not specifically report that digoxin stopped the heartbeat demonstrated an understanding that digoxin's effect was to terminate the pregnancy (Table 4, quotes 4.1, 4.2). One participant described this as

Table 2
Knowledge and experience of digoxin injection among women who received digoxin injection before second trimester abortion

	N=20
Reported the experience of digoxin injection to be better than anticipated	14 (70)
Reported the experience of digoxin injection to be worse than anticipated	6 (30)
Would choose digoxin again	15 (75)
Would not choose digoxin again	5 (25)
Reported that digoxin stopped fetus' heartbeat	17 (85)
Reported digoxin "started the process of abortion"	3 (15)

All data are presented as n (%) or mean±S.D.

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