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Choice of and Satisfaction with Methods of Medical And Surgical Abortion Among U.S. Clinic Patients

By S. Marie Harvey, Linda J. Beckman and Sarah J. Satre

Context: Abortion induced by drugs is now a viable alternative to surgically induced abortion for U.S. women. Women's willingness to use these new methods of medical abortion hinges on the extent to which they prove acceptable, however.

Methods: Among 304 women participating in a clinical trial of medical abortion, 186 received a methotrexate-induced abortion and 118 were offered the option of a medical abortion but chose a surgical procedure instead. Study participants completed self-administered questionnaires before the abortion and again at a follow-up visit.

Results: Women in the medical and surgical abortion groups did not differ significantly with regard to demographic and other background characteristics: Their mean age was about 27, more than two-thirds were white, and three-quarters were unmarried and worked either part-time or full-time. However, women's ratings of seven attributes of abortion methods were significant predictors of choosing a medical abortion: Women were more likely to choose medical abortion if they placed greater importance on a method that was nonsurgical, one that resembled a miscarriage or one that could take place at home (odds ratios, 2.0-3.3). Conversely, women were less likely to choose medical abortion if they valued methods that were quick, that did not involve painful cramping or seeing blood or blood clots and that needed a doctor or nurse to be present (odds ratios, 0.3-0.5). Compared with those who had a surgical abortion, women who had a methotrexate-induced abortion expected more bleeding (mean scores, 3.5 vs. 3.1) and reported more pain (3.4 vs. 2.9), heavier bleeding (3.4 vs. 2.5) and bleeding of longer duration (3.3 vs. 2.6). The overwhelming majority of women in the medical and surgical abortion groups reported that they were either very or somewhat satisfied with their abortion method (81% and 82%, respectively), would recommend it to others (82% and 78%) and would choose the method again (89% and 93%).

Conclusions: Factors affecting the choice of abortion method appear to be numerous and complex. Providers need to be sensitive to differences in women's values and life circumstances when counseling them about an abortion method. In particular, providers should incorporate into their counseling sessions what women need to know about the characteristics of abortion methods and help women to identify what is the best option for them.

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S. Marie Harvey is director of research, Center for the Study of Women in Society, University of Oregon, Eugene, OR. Linda J. Beckman is professor of health psychology, California School of Professional Psychology, Alliant University, Los Angeles. Sarah J. Satre is research associate, Applied Research Northwest, Bellingham, WA. The authors are grateful to the site coordinators and staff at the participating Planned Parenthood clinics, especially Sue Ferden in Iowa, Madge Armstrong in Pennsylvania, Evonne Morici and Rebecca Whiteman in California, Jini Tanenhaus in New York and Vicki Jacobs in Arizona. Funding for the research described in this article was provided by grants from The John Merck Fund and the Education Foundation of America to the Public Health Institute; the authors heartily thank them for their generous support. Finally, the authors thank the women who took the time to share their perceptions and experiences.

In the United States, women seeking to terminate an early pregnancy now have a

choice between medical and surgical abortion procedures. The two major drugs currently being used to induce abortion are mifepristone and methotrexate (both used in conjunction with the mild prostaglandin misoprostol). Medical abortion induced with mifepristone followed by misoprostol has been used extensively in Europe and China. However, only recently has this option become available to U.S. women. The Food and Drug Administration (FDA) gave final approval to release mifepristone for use as an abortifacient on September 28, 2000, after 12 years of political struggle. In the early 1990s, prior to the approval of mifepristone, medical researchers also began to explore the use of methotrexate to induce abortion.[1] Methotrexate had already received FDA approval in 1953 for the treatment of cancer; thus, physicians could prescribe it legally as an abortifacient, even though it had not been approved by the FDA for that purpose.

The availability of medical abortifacients promises to increase U.S. women's access to abortion, but this will happen only if women are willing to use them and if they find such drugs acceptable. Acceptability among consumers is particularly important because the success of medical abortion depends on women's willingness to complete the regimen at home and to wait for the drugs to take action. In addition, information about women who choose this option, and how they differ from women who select the more traditional surgical procedure, is important to health care providers planning to offer medical abortion services.

Several studies conducted outside the United States have documented that women find medical abortion acceptable. Although the published studies of first-trimester medical abortion are diverse in research designs, their findings are quite consistent: Most women who had a first-trimester medical abortion were satisfied with the procedure, would choose it again if they needed to terminate another pregnancy and would recommend it to their friends.[2]

Only a handful of studies have explored the acceptability of medical abortion among U.S. women.[3] These studies, like those conducted in Europe and Asia, document high levels of acceptability among women who chose and used medical abortion for first-trimester abortion. Although these descriptive studies indicate that medical abortion is acceptable to American women, no studies to date have directly compared the acceptability of medical abortion to that of the current standard therapy, suction curettage abortion. Moreover, no studies have examined factors associated with the selection of medical versus surgical procedures among women in the United States.

Our overall purpose in this article was to compare women who chose methotrexate-induced abortion with those who selected suction curettage abortion regarding their experience and level of satisfaction with the abortion procedure. Our specific objectives were to: identify factors associated with the choice of abortion method; compare the two groups with regard to anticipated and actual experience (pain, anxiety and bleeding) with their abortion method; determine whether women who have medical abortions are more or less satisfied than women who have surgical abortions; and identify factors associated with women's satisfaction with their chosen abortion method.

METHODS

Participants

This acceptability study was conducted in conjunction with the Planned Parenthood Federation of America (PPFA) clinical trial to evaluate the medical abortion experience for women and determine the effectiveness of methotrexate and misoprostol for early abortions. Our sample includes 186 women who had methotrexate-induced abortions while enrolled in the PPFA clinical trial at clinics in Des Moines; New York City; Phoenix; York, Pennsylvania; and Walnut Creek, California. We compare these women with 118 who were eligible for the clinical trial and were offered the option of a medical abortion, but chose the surgical procedure instead.

In the protocol used by PPFA, methotrexate was administered in the form of an injection during a clinic visit. Women were then given two doses of misoprostol (eight tablets, 200 milligrams each) to take at home, with instructions to insert one dose vaginally 4-6 days after the injection of methotrexate. If the abortion did not occur within 48 hours of insertion, they were to insert a second dose. A return visit to the clinic was required within 14-16 days after the initial injection.[4]

Although the majority of the surgical procedures were performed using electrical vacuum aspiration, 10% were done with manual vacuum aspiration. All surgical patients were scheduled to return for a follow-up visit 2-4 weeks after the procedure.

Between September 1997 and July 1998, clinic personnel at participating PPFA affiliates recruited all women who were 18 years of age or older and who met the eligibility requirements for the methotrexate clinical trial.* After the women had been counseled on abortion method options and had chosen either medical or surgical abortion, they were given written information about the acceptability study. Clinic staff explained to the women that their participation was completely voluntary and would not affect the care they received. The women were given time to look over the materials and trained clinic staff answered their questions. If a woman expressed interest, she was asked to give written consent for the acceptability study, and she was given brief instructions on how to complete the questionnaires.

Of the 368 eligible women asked to participate, 304 (83%) consented and completed the initial questionnaire (81% of the surgical group and 86% of the medical group). Women who agreed to participate were compared with those who refused on three demographic characteristics: age, ethnicity and education. Although the two groups did not differ significantly by age or ethnicity, women who participated in the study reported significantly higher levels of education than did nonparticipants ($p<.05$).

Among the 304 participants, 255 (84%) completed the follow-up questionnaire. The follow-up rate was significantly higher among women who had undergone medical abortion than among those who had had a surgical abortion (89% vs. 76%, $*^2=8.26$, $p<.01$).

Data Collection

Data were collected at two stages, using pretested, self-administered questionnaires. Women completed the initial questionnaire after they had chosen their abortion method but before the injection was given or the surgical procedure was performed. This instrument collected background information and data on the following topics:

the abortion method chosen; women's expectations about the method chosen with regard to pain, anxiety and bleeding; and the relative importance of different method characteristics in women's decision-making. Clinic staff verified the abortion methods reported by the women.

Participants completed the second questionnaire during or after their follow-up visit to the clinic. Data collected in this questionnaire included women's experience with the abortion method, their degree of satisfaction with the method, whether they would choose the method again and whether they would recommend the method to friends. The surgical patients were required to complete the questionnaire within four weeks of the procedure; approximately 90% did so at their two-week follow-up visit. Medical patients were required to complete the questionnaire no more than two weeks after clinic staff confirmed that the abortion was complete; the vast majority did so during the visit at which the abortion was confirmed to be complete. Three-fourths of the women had confirmed complete abortions within 20 days after the administration of methotrexate (median, 15 days). Thus, approximately 60% of the medical patients completed the follow-up questionnaire within two weeks and 80% within three weeks of administration of methotrexate.

Measures

To determine the characteristics that women value in an abortion method, in the initial questionnaire we asked participants to rate the importance of 21 characteristics "when choosing between surgical and medical abortion." Participants recorded their responses on a five-point Likert scale ranging from a value of 1 for "not important" to a value of 5 for "extremely important."

On the initial questionnaire, women were asked about their expectations regarding four aspects of their abortion procedure: pain, anxiety, amount of bleeding and length of bleeding. At follow-up, they were asked about their actual experiences based on the same four items. Women rated each item on a five-point Likert scale. For the first three characteristics, scale points ranged from "none" (1) to "extreme" (5). For the length of bleeding, possible responses were 1-3 days (1), 4-6 days (2), 7-9 days (3), 10-12 days (4) and 13 or more days (5). We used identical scale points for expectations and experiences, but the wording of items differed slightly (e.g., "How much pain do you think you will have?" in the initial questionnaire, versus "How much pain did you have?" in the follow-up questionnaire.)

Finally, we assessed women's satisfaction with their chosen abortion method using responses to three questions from the follow-up survey. The first asked, "How satisfied were you with your abortion method?" Participants were asked to indicate if they were "very satisfied," "satisfied," "neutral," "dissatisfied" or "very dissatisfied." The second question asked women whether they would recommend their abortion method to a friend. Women could respond by checking "definitely yes," "probably yes," "don't know," "probably no" or "definitely no." Also, women were asked which method they would choose if they were to have another abortion—surgical abortion or medical abortion with methotrexate and misoprostol.

Analytic Approach

We compared categorical variables using chi-square analysis, and continuous variables using either a t-test or a paired t-test (the latter for within-group comparisons). We conducted bivariate analyses to examine the association between abortion method choice and factors hypothesized to be relevant to this choice. Because of the large number of comparisons, we set the significance level for the bivariate analyses at $p<.01$. We then performed a logistic regression analysis to determine predictors of medical abortion selection, using only variables that were significant in the bivariate analyses. We also conducted bivariate analyses for medical and surgical abortion patients separately to examine the association between satisfaction with abortion and factors hypothesized to influence satisfaction.

RESULTS

Participant Characteristics

Women in the medical and surgical abortion groups did not differ significantly with regard to any of the demographic characteristics examined (Table 1). Ages of participants in both groups ranged from 18 to 45; the mean age was 27.5 years. More than two-thirds of the women were non-Hispanic white, 12% were black and 11% were Hispanic or Latina. More women in the medical group (40%) than in the surgical group (28%) had completed college, although this difference was not statistically significant. Three-fourths of the participants were single and had jobs outside the home.

The two groups were also similar with regard to other background variables. Half of the participants (52%) reported a previous birth. One in five women had experienced a miscarriage (20%), and almost half (47%) had experienced a previous surgical abortion—although this proportion was somewhat greater in the medical abortion group (51%) than in the surgical abortion group (42%). Most women (84%) reported feeling very comfortable or somewhat comfortable with their decision to have an abortion. More than one-fifth of all participants (22%) reported having been raped, sexually abused or forced to have sex at some time in their lives.

Method Attributes and Method Choice

Women who chose medical abortion differed significantly from those who selected surgical abortion in their ratings of 14 of the 21 attributes (Table 2). Surgical abortion patients gave significantly greater importance than medical abortion patients did to 10 attributes: The procedure is over with quickly (4.6 vs. 4.0); it does not have side effects such as nausea, headache and diarrhea (3.8 vs. 3.2); it does not cause heavy bleeding (3.6 vs. 2.9); the patient does not see blood (3.0 vs. 1.9); the procedure does not cause cramping (3.6 vs. 2.5); it does not lead to bleeding for longer than seven days (3.5 vs. 2.9); it is a technique that has been used for a long time (3.9 vs. 3.1); it takes only a few visits (3.8 vs. 3.4); a doctor or nurse is present (4.1 vs. 2.8); and the patient knows where and when the abortion is taking place (3.9 vs. 3.4).

In contrast, medical abortion patients gave four attributes significantly greater importance than did surgical abortion patients: The procedure does not involve surgery (4.2 vs. 3.1), it takes place in the privacy of home (3.9 vs. 2.3), it does not involve surgical instruments (3.9 vs. 2.6) and it is like a natural miscarriage (3.9 vs. 2.6).

We included these 14 attribute ratings in a logistic regression model as predictors of choosing a medical abortion. The results of the logistic regression reveal that seven attributes were significant predictors of choosing medical abortion (Table 3). Women who placed greater importance on a method that did not involve surgery (odds ratio, 2.7), that allowed the abortion to take place at home (odds ratio, 2.0) and that resembled a natural miscarriage (odds ratio, 3.3) were more likely to choose medical abortion. Conversely, women were less likely to choose medical abortion if they valued a method that was quick (odds ratio, 0.3), that did not require the patient to see blood or blood clots (odds ratio, 0.5), that did not involve painful cramping for more than an hour (odds ratio, 0.5) and that was performed under a doctor's or nurse's supervision (odds ratio, 0.3). The regression model correctly classified 93% of the total sample, including 96% of those who chose the medical procedure and 87% of those who chose surgical abortion (not shown).

Expectations and Experiences

Women who had chosen a medical abortion expected more bleeding than women who had chosen surgery (Table 4); otherwise, the two groups were similar in their expectations. When rating their actual experience, women who had undergone a medical abortion reported greater pain and heavier and more prolonged bleeding than did women who had had a surgical abortion.

Paired t-test comparisons were performed to evaluate how well women's abortion experiences matched their expectations. Women who had medical abortions experienced significantly more pain (mean of 3.4 compared with 3.2, $p<.01$) and bled longer (mean of 3.3 compared with 2.7, $p<.001$) than they had expected. Women who had surgical abortions experienced significantly less bleeding than they had expected (mean of 2.5 compared with 3.1, $p<.001$).

Acceptability of Abortion Method

Both methods were highly acceptable. Nearly half (48%) of the women who had participated in the clinical trial were very satisfied with their methotrexate-induced abortion. Another 33% reported that they were somewhat satisfied. Similar percentages of women who had had surgical abortions reported that they were very satisfied (43%) or somewhat satisfied (39%) with their abortion method ($p=.64$). The majority of participants reported that they would recommend the method they had experienced to a friend (82% of women in the medical group and 78% of those in the surgical group, $p=.45$). Similarly, 89% of the women in the medical group and 93% of those in the surgical group stated that they would select the same abortion method if they had to terminate another pregnancy ($p=.33$).

We compared women in the medical cohort who reported that they were satisfied or very satisfied (81%) with their abortion procedure with those who were neutral, dissatisfied or very dissatisfied regarding factors hypothesized to influence satisfaction. The 10 variables examined in these bivariate analyses included previous experience with surgical abortion, failure of the medical abortion procedure, four measures of the experience of abortion (anxiety, pain, amount of bleeding and duration of bleeding) and four measures of the difference between expectations and experience (anxiety, pain, amount of bleeding and duration of bleeding). The latter

four measures were calculated by subtracting the expectation rating from the experience rating for each item. Among medical abortion patients, women who were satisfied or very satisfied did not differ from other women on any of these variables.

Women in the surgical cohort who reported that they were satisfied or very satisfied (82%) with their abortion procedure were compared with those who were neutral, dissatisfied or very dissatisfied with regard to the same factors described above (with the exception of procedure failure). Surgical patients in the dissatisfied group reported experiencing higher levels of anxiety ($p<.01$) compared with the satisfied group, but the two groups did not differ according to any other factors.

DISCUSSION

It is noteworthy that women's choice of method was not related to demographic characteristics, to prior experience with miscarriage, abortion or sexual abuse, or to level of comfort with the decision to have an abortion. These findings are supported by other studies which have not found demographic characteristics to be predictive of choice of method.[5] However, they appear to contradict some of the attitudes and observations of medical abortion providers documented in our previous study.[6] According to preliminary data from that study, many providers believed that women were better candidates for medical abortion or more likely to choose the method if they were older, more educated, of higher socioeconomic status and able to speak English.

Because the range of demographic and other characteristics of women in this sample is limited, additional research is warranted. However, our findings suggest that reproductive health providers and counselors need to reexamine their assumptions and recognize that factors affecting method choice are numerous and complex.

Women's preferences regarding abortion method characteristics were significant predictors of the abortion method that they chose. This finding underscores the fact that women have different values and life circumstances that may influence their choice of abortion methods. Providers need to be aware of and sensitive to such differences when counseling women about choice of methods.

Women who had methotrexate-induced abortions reported significantly greater pain, more bleeding and longer duration of bleeding than did women who had surgical abortions. This finding is consistent with a previous study documenting heavier and more prolonged bleeding among patients having mifepristone-induced abortions than among those who had surgical abortions.[7] Despite the greater discomfort and inconvenience associated with medical abortion, the overwhelming majority of women in both groups reported that they were satisfied with their method, would recommend it to others and would choose the method again.

Our findings highlight the importance of abortion education and counseling. All women need to be knowledgeable about the characteristics of abortion methods and understand how their own values, experiences and life situations can help them to identify the best option. In addition to providing objective information about the methods (e.g., a medical abortion may involve more pain and heavier bleeding for a longer duration), providers should assist women in assessing their degree of comfort with having a surgical procedure, with seeing blood and tissue, and with experiencing

an abortion without medical personnel being present. They should also determine whether a woman prefers an abortion that is completed quickly, that takes place in the privacy of her home or that resembles a natural miscarriage. By incorporating these issues into their counseling sessions, providers will assist women to make more informed choices among abortion methods.

Our sample of medical abortion patients was limited to women who had used methotrexate. No studies to date have contrasted the experiences and satisfaction of women who obtain methotrexate-induced abortions with those of women who get mifepristone-induced abortions. However, previous studies of both patients and providers indicate that women may prefer mifepristone abortions because they take less time.[8] It is therefore likely that mifepristone will become the drug of choice for medical abortions among women in the United States.

Because the characteristics of and procedures for these two types of medical abortion are quite similar, findings from this study can be applied to mifepristone-induced abortions, and perhaps even to new drug-induced methods still under development. However, research is still needed to evaluate women's experience with different types of drug-induced abortions, as well as their experience with mifepristone abortions versus surgical procedures.

Our sample may have limited generalizability. As previously mentioned, the women in our study sample were enrolled in a clinical trial. It is possible that early adopters of a new technology may differ from those who choose a method after it has become more established and familiar. Attitudes about newness and risk-taking may be important for both method choice and satisfaction.[9] Additionally, although response and retention rates were fairly high, women who enrolled in and completed our study may have differed from those who did not. Finally, because our sample was small and fairly homogeneous, our findings may not be generalizable to women from different racial and ethnic groups.

Our findings underscore the importance of expanding women's access to medical abortion. It is important to note that women were satisfied with whichever method they chose—medical or surgical. Previous studies have found that choice is associated with higher levels of satisfaction, regardless of the method chosen.[10] Giving women a choice among abortion methods should therefore increase their overall level of satisfaction with abortion methods and services. Facilities currently offering only surgical abortion should expand their services to include medical abortion, and health providers, policymakers and advocates should continue their efforts to make medical abortion available to all women in the United States.

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*Women were eligible to enroll if their pregnancy was no more than 49 days of gestation. Vaginal ultrasound was required. Clinicians used the fetal embryonic pole (if present) to determine gestational age; otherwise, they used the diameter of the gestational sac. If the embryonic pole was longer than 10mm, the woman could not enroll. A gestational sac did not need to be present for a woman to be enrolled, but if a sac was not present, a serum beta-HCG was performed. If the beta-HCG was less than 2,000 mIU/ml and if the woman did not have symptoms suggestive of ectopic pregnancy, she could enroll. Women with a hematocrit of less than 30% were excluded. Rh-negative women received minidose Rh immune globin on the day of methotrexate administration. Although women younger than 18 were eligible to enroll in the clinical trial if they had parental consent, all participants in the acceptability study were required to be 18 or older. (Source: see Borgatta L et al., 2000, reference 3.)