ARTICLES

Acceptability of Medical Abortion In Early Pregnancy

By Beverly Winikoff

A review of 12 published studies on patient attitudes and reactions to early first-trimester pregnancy termination by medical methods shows consistent patterns, despite important differences in study design, measurement and outcome. In most trials that offered participants a choice between surgical and medical abortion, 60–70% of patients chose the medical method. The most common reasons cited for choosing the medical method were greater privacy and autonomy, less invasiveness and greater naturalness than surgery. Frequently mentioned drawbacks included pain, the duration of bleeding, the number of visits, and the waiting time to know if the treatment has been successful. Most women who had a medical abortion said they were satisfied with the method, would recommend it to friends and would use it again if they needed another abortion.

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Women in the United States seeking abortion early in pregnancy may soon be able to choose between a medical method and a surgical procedure. How will patients and providers receive this new choice? Direct evidence is scarce, partly because of the lack of U.S. trials of medical abortion and of acceptability research for abortion methods generally.

Only one U.S. clinical trial has investigated the efficacy of mifepristone (often referred to as RU 486), the antiprogestin most likely to be approved for medical abortion in early pregnancy in this country.[1] That study investigated a regimen of oral mifepristone alone. The regimen currently undergoing clinical trials for widespread introduction in the United States consists of oral mifepristone followed two days later by the oral prostaglandin misoprostol. In the absence of direct evidence, we must glean insights on this new method's acceptability to patients from the small body of existing research in the literature, mostly experimental and mostly conducted in other countries.

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Acceptability

To become widely used, a new method of abortion must be acceptable to its potential consumers and providers. Rather than being strictly an inherent quality of a method, acceptability is the result of an interaction among the values a person holds,[2] the individual's perceptions of the attributes of particular products, and the service delivery system the consumer encounters.

If a method's perceived attributes correspond to a consumer's values, that individual may consider the method desirable, preferable or acceptable. Anything affecting values or perceptions can therefore affect acceptability. Characteristics that may influence both values and perceptions include ethnicity, nationality, culture, class, education, personality and experience. Perceptions are also influenced by the inherent qualities of an item and the available alternatives.

Previous research on abortion[3] has identified some attributes that are important to acceptability. These attributes include efficacy, safety, freedom from side effects and pain, ease or convenience, gentleness and noninvasiveness, privacy, autonomy and affordability.

The acceptability literature is difficult to summarize, partly because medical abortion regimens have evolved rapidly over the last decade. These regimens may use antiprogestins or prostaglandin analogues, or some combination of the two. Mifepristone is an oral medication, but the prostaglandins may be administered orally, vaginally or intramuscularly. Reported side effects of the procedure have ranged from minimal to extremely serious. Service delivery has been no more uniform: Some women have been treated as inpatients, others as outpatients, and still others have taken the drugs at home. These differences may greatly affect the perception and acceptability of a method's characteristics.

The characteristics of the surgical abortion techniques to which women may compare medical regimens also vary. For example, vacuum aspiration can be provided as an inpatient or outpatient procedure and can be carried out under general or local anesthesia. Individuals in comparative studies are thus assessing various medical abortion regimens against an alternative that varies from study to study.

Despite the variety of regimens and protocols, clinical research has shown that regardless of the drugs or procedures used, some characteristics appear to be intrinsic features of current methods of medical abortion. When compared to surgical abortion, medical abortion offers slightly lower efficacy, takes longer from initiation to completion, leaves the patient more conscious of bleeding and of expulsion of the products of conception, and hinders the provision of other procedures for fertility regulation (e.g., IUD insertion or sterilization). Patients who object strongly to one or more of these characteristics may reject medical methods. For these women, improvements in acceptability can come only with further advances in technology.

Several other differences from surgical abortion that might at first appear intrinsic to medical methods actually depend on

service delivery choices. These features include additional doctor visits, pain (functions of the type of anesthesia used in surgery and the dose and type of prostaglandin used for medical abortion) and absence of the requirement for admission to the hospital, still a part of the surgical protocol in some cases. Cost cannot be evaluated because experimental techniques (such as those under study in the articles reviewed) are often provided without charge. In most countries where the medical regimen is now offered, its price is sheltered from market forces so that the cost to patients is the same as surgical abortion.

Studying Acceptability

Acceptability can be examined in several ways.[4] Most research on medical regimens has relied heavily on interviews conducted with users before and after their abortion. This technique records a user's thoughts about the method's attributes before and after use, allowing inferences about any changes that occur. Although all acceptability studies of medical abortion rely on before-and-after patient interviews, the approach has several methodological pitfalls.

Enrollment

A study selects the people who enroll, limiting accurate generalizations to the broader population. Inclusion or exclusion criteria and provider bias are among the factors that could render a study sample unrepresentative of the general population of early abortion patients. In addition, volunteers may accept more onerous regimens and may tolerate inconveniences of a method that would elicit dissatisfaction in a broader patient group.

Because anyone can get the standard treatment without enrolling in a study, those entering a comparative trial of a new method may be especially averse to some feature of the standard method or be especially attracted by some aspect of the new method. Even if a trial offers a choice of methods, participants who select the standard method may differ from the general population of users of that method. For some reason, these participants have enrolled in a study when they could have received the same treatment without doing so.

Patients with prior abortion experience are often considered an especially good test of the acceptability of new methods because the same user can then rate two different technologies. However, such women usually have experienced surgical abortion, and those among them who opt for medical methods in clinical trials may have been especially dissatisfied with the earlier procedure. In addition, perceptions and attitudes may change, so an individual's evaluation of different methods at different times may not be based on the same criteria.

Randomization

Classical clinical trials allocate patients randomly into groups assigned to, for example, the best currently available therapy or an experimental therapy. The ideal is a double-blind study in which neither patient nor prescriber knows which treatment is received. Double-blind trials are impossible when comparing medical to surgical methods of abortion.

Moreover, an "experiment" designed along classical lines identifies only the method that would be more acceptable if a similar population of patients were *assigned* to a method, for instance, if a health service could offer only one technology for first-trimester abortion. If more than one technology is available, however, patients who select a given method are likely to differ from those who select an alternative method. Thus, the acceptability results of a random allocation trial may not predict the reactions of the women most likely to use the method once it becomes available as a choice.

A random study also requires that women who enroll be willing to accept any of the procedures offered. If a woman has an aversion to one of the study methods, she may not enroll in the study at all for fear of being assigned to a treatment she could not accept. Such refusals of treatment have occurred in random allocation studies of medical abortion,[5] indicating that randomized study populations do not represent the full range of women who will be candidates for the methods under study.

Comparison Groups

To scientists, a comparative trial seems the fairest and most scientific test. Although this is often the case, such studies have limitations in comparing the acceptability of a new method with that of an established one. Both users and providers may have well-formed ideas about the risks, benefits and characteristics of the standard method or nebulous or erroneous impressions of the new method. Personal biases, rumor and fantasy may disproportionately affect attitudes toward the new method. Providers may be able to offer realistic and specific counseling about the usual procedure but only speculation about the newer one. Users' attitudes about newness and risk-taking in general may be important in both method choice and method evaluation.

Patient Acceptability Studies

The existing literature on acceptability of medical abortion is limited. Since 1979, 12 studies evaluating the acceptability of first-trimester medical abortion have been published (Table 1, page 144). Investigations occurred in seven different cultures. In only one study did groups have more than 100 patients.

Because medical abortion regimens have evolved since they were first introduced, they produce a wide range of side effects and, therefore, of patient reactions. The two earliest studies used prostaglandin vaginal suppositories alone. Later, mifepristone was used alone or in combination with a prostaglandin administered vaginally, intramuscularly or orally. Mifepristone was studied alone in two studies; a combination of mifepristone and a prostaglandin vaginal suppository was evaluated in seven studies, one of which used mifepristone plus an oral prostaglandin as a comparison treatment; and mifepristone plus injectable prostaglandin was studied in one.

Of the 12 studies, two were of one method only, five involved patient choice of a method, four involved random allocation, and one used both patient choice and random allocation. Only seven of the 12 dealt with regimens that have been approved for regular clinical use in any country, and most of these used vaginal suppositories as the vehicle for the prostaglandin.

In two studies, eligibility was restricted to patients in very early stages of pregnancy (≤42 days of gestation). Three studies allowed enrollment up to 49 days of amenorrhea, two studies through 56 days and four studies through 63 days. One study report states only that women having a medical abortion were in very early pregnancy. Because the experience of medical abortion can be quite different for patients at the extremes of these ranges, acceptability ratings may have been affected.

Exclusion criteria also varied, producing groups with both obvious and unknown differences. Rosén and colleagues studied only women who had a complete abortion[6] or had had a prior delivery.[7] Grimes and colleagues[8] studied women without administering a pregnancy test, and half turned out not to be pregnant. The number of visits required of patients varied from as few as two to as many as seven.[9] The interviews differed in number and in timing relative to the treatment.

Factors Affecting Acceptability

Despite the great variations in protocol, these studies provide clear general con-

Table 1. Published studies of acceptability of first-trimester medical abortion

Author, year and country	Patients and methodology	Duration of amenorrhea	Visits*
Rosén,[6] 1979, Sweden	60 patients randomized to vacuum aspiration or prostaglandin suppository	≤56 days	≥3
Rosén,[5] 1984, Sweden	53 patients randomized to vacuum aspiration, prostaglandin suppository in hospital, or suppository at home	≤49 days	≥2
Hill,[14] 1990, England	100 volunteer patients given mifepristone, then gemeprost suppository	≤63 days	5
Tang,[9] 1991, Hong Kong	42 patients given choice of vacuum aspiration or mifepristone and suppository	<49 days	2 7
Urquhart,[17] 1991, Scotland	91 patients who chose vacuum aspiration or mifepristone with gemeprost suppository	≤63 days	3 4
Legarth,[18] 1991, Denmark	50 patients randomized to vacuum aspiration with general anesthesia or mifepristone	≤42 days	3
Holmgren,[9] 1992, Sweden	128 patients who asked for vacuum aspiration with heavy sedation, aspiration with light sedation, or mifepristone with gemeprost suppository	9–12 wks.; 5–8 wks.; "very early"	2 2 7
Bachelot,[20] 1992, France	391 patients who chose vacuum aspiration with general anesthesia, aspiration with local anesthesia or mifepristone with sulprostone injection	≤49 days	3–4 3–4 4–5
Grimes,[8] 1992, U.S.	16 women with late menses randomized to mifepristone or placebo without pregnancy test	<42 days	4
Thong,[22] 1992, Scotland	180 patients given mifepristone with either gemeprost suppository or oral misoprostol† and randomized to ward or sitting room	≤63 days	5
Tang,[16] 1993, Hong Kong	144 patients who chose mifepristone with prostaglandin suppository or vacuum aspiration	<49 days	2 5
Henshaw,[23] 1993, Scotland	99 patients randomized to vacuum aspiration with general anesthesia or mifepristone with gemeprost suppository and 73 patients who chose between the two	≤63 days	2 3

*One study may require different numbers of visits for different methods; the order in which visit numbers appear corresponds to the order in which the methods are listed. †Study did not report whether patients were randomized to gemeprost suppository or oral misoprostol.

clusions about factors affecting the acceptability of medical abortion services because of the strong consistency in their findings (Table 2).

•*Rosén.* Pioneering work by Rosén and colleagues in Sweden[10] tested acceptability in patients randomly allocated to vaginal prostaglandin or vacuum aspiration. Their hospital was well known for its work on medical abortion and attracted patients interested in that method, a particular subset of the general population of eligible women. In one study,[11] the first 30 patients using each method who had complete abortions were evaluated. Thus, failure as a reason for method dissatisfaction was not registered, and differentials in success rates were erased as reasons for preferring one method over another.

Prostaglandin treatment was, by far, the preferred method in both the medical and the surgical abortion group prior to treatment. Women treated with the medical regimen gave it higher ratings after the abortion, saying they valued the naturalness of the method and the privacy during treatment. On the other hand, they disliked the pain and the duration of treatment and reported more bleeding than did the women who had a surgical abortion. They viewed the possibility of a self-administered abortion method more positively after the experience of medical abortion. The acceptability of surgical abortion among the surgical patients—many of whom had indicated beforehand that they would prefer a medical procedure—showed a sharp increase after treatment.

A later study[12] compared surgical abortion to medical abortion in the hospital clinic and at home. Overall, 84% of the women enrolled said they would prefer a medical abortion, including 69% who said they would like to have the treatment at home. Success rates were high for both methods (100% for surgical abortion and 97% for medical abortion), but bleeding lasted about twice as long for women who had a medical abortion.

Among the women who had a medical abortion, 39% of those treated in the hospital and 6% of those treated at home required an analgesic injection. No surgical patients required analgesia after the dose given at surgery. Women did not change their positive attitudes toward medical abortion after their experience of it. As in the earlier study, vacuum aspiration patients were much more positive about surgical abortion after treatment.

In a summary of the two studies,[13] Rosén noted that most patients said they would select the same method if they needed a repeat abortion. This preference was slightly stronger among women who had a medical abortion than among those who had a surgical abortion (75% vs. 68%). On the other hand, women who had a medical abortion were more likely to say that they would prefer and recommend the method they had not used (16% vs. 13%).

Most of the medical abortion users who switched preferences after treatment did so because of pain or amount or duration of bleeding. Some disliked the length of the procedure. When women who had a surgical abortion were interviewed after treatment, 31% said they preferred medical abortion because it was more natural, involved less risk of infection and required no hospital admission. Surgical patients who preferred surgical abortion cited a quick, simple procedure with no pain.

•*Hill.* In a study of 100 women using mifepristone plus a vaginal prostaglandin suppository, Hill and colleagues[14] found that only 64% of the women offered the method agreed to try it instead of the routine surgical abortion. About half of those who declined ascribed their reluctance to the length of the trial and the required follow-up, and about half stated that they would prefer to be asleep during the procedure.

After the procedure, 88% of the women said they would use the method again if they needed another abortion, while 9% said they would not and 3% were unsure. Of the six women who said they would not use the method again, two were dissatisfied because the method had failed, and four considered it too painful. All 18 patients who had previously had a surgical abortion preferred medical abortion.

•*Tang.* In a 1991 study, Tang[15] reported on a trial in which women chose either mifepristone plus vaginal prostaglandin suppository or surgical abortion. Twenty-three women selected medical abortion, and 19 chose vacuum aspiration. The most common reasons given for choosing medical abortion were that it caused less trauma to the body (38%), that it was more natural (22%), or that the woman perceived that her physician preferred the medical method (13%). Some women expressed fears about aspects of surgery—pain (11%), general anesthesia (5%) and hospitalization (9%). The reasons given for not choosing medical abortion were worries about efficacy or side effects (28%), the

Table 2. Results of acceptability studies among patients using medical methods for first-trimester abortion

Author and year	Patients	Preabortion attitudes	Postabortion attitudes	Would use again
Rosén, 1979	30, prostaglandin suppository	More favorable to medical than surgical procedure	Better, easier and more harmless than expected; more pain and bleeding than surgical patients	Not reported
Rosén, 1984	18, prostaglandin suppository in hospital; 17, prostaglandin suppository at home	Preferred to vacuum aspiration by 15% of hospital sample and 65% of home sample; medical abortion more natural; some felt safer in hospital; home more comfortable and private; partner support possible at home	Generally met positive expectations; pain and bleeding led some to prefer surgical procedure	64% yes
Hill, 1989	100, mifepristone and prostaglandin suppository	64% of those offered method agreed to try it	>50% needed pain relief after prostaglandin	88% yes; 3% unsure; 9% no (3% failure, 6% pain)
Tang, 1991	23, mifepristone plus prostaglandin suppository	*Acceptors:* less trauma (38%); more natural (22%); felt MD preferred (13%); feared pain from surgery (11%).	*Day 8:* relieved (30%); natural (21%); safe (14%); convenient (9%). Doubt abortion complete (9%); visits inconvenient (4%); sad, saw products of conception (4%). *Day 43:* Bled too long (11%). Overall, 96% would recommend to friends	91% yes; 9% no
Urquhart, 1991	54, mifepristone plus prostaglandin suppository	Not reported	Liked awareness of process, greater control, avoidance of anesthesia; method more discreet; more negative attitudes among younger or nulliparous women, those who needed more pain relief or saw products of conception; 10 of 13 who had previous abortion experience preferred medical abortion	75% yes
Legarth, 1991	25, mifepristone	Not reported	Rated acceptable by patients classified as "uncomplicated" cases; 20% of such cases reported mild side effects; all 4 patients with previous abortion experience preferred medical method	Not reported
Holmgren, 1992	45, mifepristone plus prostaglandin injection	Not reported	*Week 2:* Positive assessment (87%); expressed relief (40%); bleeding heavier than menses (65%); "much" pain (44%)	81% yes
Bachelot, 1992	251, mifepristone plus prostaglandin injection	*Acceptors:* less trauma (67%); less dangerous (29%); less risk to future fertility (27%); liked newness, efficacy, lack of invasiveness, possibility of verifying expulsion, and naturalness of process	Large majority satisfied; 63% wanted to see what had been expelled; 12% somewhat dissatisfied; many needed rest after procedure; some found method not as quick and easy as they had expected	Not reported
Grimes, 1992	16, mifepristone or placebo	Believed in efficacy; preferred medical to surgical abortion	Liked privacy and noninvasiveness; some in both groups had pain and nausea; 3 with previous abortion experience preferred medical method	Generally yes
Thong, 1992	94, mifepristone with prostaglandin suppository; 86, mifepristone with oral prostaglandin	Majority came in requesting medical method	Majority preferred treatment in sitting room; 60% of the oral prostaglandin group needed no pain relief (more pain relief needed by suppository group); 95% would recommend method to friends; 11 of 41 women with prior surgical abortion satisfied	Not reported
Tang, 1993	99, mifepristone plus prostaglandin suppository	Fear of surgery (81%); convenient for work (41%); less injury to body (21%); fear of general anesthesia (11%)	*Day 8:* Relieved, felt good (28%); convenient and safe (20%); avoidance of surgery (12%); painful (11%). *Day 43:* too time-consuming (11%); bleeding too long (10%). 70% of women with prior abortion found medical method better	85% yes; 11% no; 4% unsure
Henshaw, 1993	172, mifepristone plus prostaglandin suppository (73 chose; 99 assigned)	*Choosers:* fear of surgery (59%); surgery too fast (21%); medical method "more natural" (21%); want to be conscious (8%)	Women who chose method more positive than those assigned to it; both found medical method more painful than surgery	95% who chose and 74% who were assigned, yes

length of the abortion procedure (18%), or a desire to get the abortion over quickly (16%). Almost two-thirds of study participants who were repeat abortion patients chose to use surgery a second time rather than switching to medical abortion.

After treatment, patients liked the medical therapy because it was "natural" or like menstrual regulation (39%) but disliked the prolonged bleeding (11%) and the inconvenience of having to make the seven visits required in the study (9%). Almost all women experiencing medical abortion (96%) said they would recommend it to friends. Two of the 23 medical abortion patients (who were not among the three method failures) would not use it again. In the surgical group, all women said they were satisfied with their method.

Single women found mifepristone more convenient because it did not require an overnight stay and they could go to work as usual, thus preserving their privacy. Some feared that surgery might affect their future fertility. On the other hand, married women with children often chose surgery because of conflict between child care obligations and the extra clinic visits required for medical abortion.

In a second study by Tang and colleagues, 99 of 144 women (69%) chose medical abortion with mifepristone plus prostaglandin vaginal suppository and 45 (31%) chose vacuum aspiration.[16] Those who were younger, single or nulliparous were more likely to select the medical method. The reasons given for choosing medical abortion were remarkably similar to those given in the previous study—fear of surgery (81%), fear of general anesthesia (11%), less injury to the body (21%) and convenience for work (41%). Those who chose surgery said they preferred it because it was quick and convenient (82%), because they did not like the number of visits or the length of the medical abortion process (69%) or because they were worried about drug efficacy and side effects (11%).

Almost all women who tried medical abortion said they would use it again (85%), including four of 12 women for whom the method failed. Of the 27 medical abortion patients who had previously experienced surgical abortion, 70% said they preferred medical abortion. At 43 days after treatment, the most common reactions were relief (38%) and complaints that the procedure took too long (11%) or that there was too much bleeding (10%).

•*Urquhart and Templeton.* In this study, the investigators assessed psychiatric morbidity and acceptability following surgical and medical abortion (mifepristone followed by a vaginal prostaglandin suppository).[17] The medical abortion patients chose their method, but surgical patients were recruited from the usual clinic patient population. The clearest finding of this study was a large decrease in anxiety and depression after successful abortion using either method.

Seventy-five percent of the women who had a medical abortion and 94% of those who had a surgical procedure said the same method would be acceptable again. Women tended to be less positive toward medical abortion if they were younger, nulliparous, had a failure or problems with the procedure or saw the products of conception. Patients liked the method because they were aware of what was happening, felt more in control and needed no anesthesia, and because they considered medical abortion more natural and discreet. Of 13 women who had previously had a surgical abortion, 77% said that they preferred the medical regimen.

This study is the only one in which women who had a surgical abortion were more likely to prefer their method than were those who had a medical abortion. This may have resulted, in part, from study design. Patients who had a medical abortion had been recruited specially for the clinical trial, while the vacuum aspiration patients were recruited after having their abortion in the regular clinic service. The patients using the medical regimen might have had higher expectations for the new treatment under study. These differences may have meant that the composition of the two groups was not comparable or that there were substantial differences in the experience of treatment. Nonetheless, in both groups, the large majority of the women were satisfied and said they would use the same method again if they needed another abortion.

•*Legarth.* In this study, patients were randomly assigned to surgical abortion under general anesthesia or to mifepristone alone.[18] Mifepristone patients reported both more persistent and more intense pain and more prolonged bleeding than did the vacuum aspiration patients. Both groups rated their method as acceptable, but the mifepristone group "evaluated the procedure more positively." Four women in the mifepristone group had previously had a surgical abortion, and all preferred the medical procedure.

One unusual finding of the study was a high rate of serious complications. Three of 25 vacuum aspiration patients developed pelvic infections, and another had a uterine perforation requiring emergency surgery. Six of 25 mifepristone patients had incomplete abortions treated by surgical evacuation, and three of those six developed pelvic infections. Even with such high failure and complication rates, women found the procedure acceptable.

•*Holmgren.* The investigator interviewed women who received either vacuum aspiration, dilatation and aspiration with heavy sedation, or medical abortion with mifepristone and gemeprost vaginal suppository.[19] The women were asked about the acceptability of the abortion experience about two weeks after treatment. The great majority of women—88% who had had an early vacuum aspiration, 72% who had had a later dilatation and vacuum aspiration, and 87% of those who had had a medical abortion—evaluated the experience positively.

Those who had had a medical abortion reported more pain and evaluated the blood loss as heavier than did the women who had had surgery. Nonetheless, 40% of the medical abortion patients said they were relieved not to have needed a surgical procedure. As in similar studies, most women (70–80%) reported that, if another abortion were necessary, they would prefer the same method.

•*Bachelot.* This study[20] is the only one that compares the acceptability of nonexperimental methods in a general clinic population. It reports on the choices of nearly 500 women seeking abortion in six French clinics, where medical abortion has been approved and available since 1988. Their options included medical abortion (mifepristone and intramuscular prostaglandin), vacuum aspiration under general anesthesia, and vacuum aspiration with local anesthesia. The study protocol limited the duration of amenorrhea to 42 days or less at enrollment. Medical abortion was the most frequently chosen method (59%), followed by vacuum aspiration with local anesthesia (31%) and vacuum aspiration with general anesthesia (11%).

Generally, women who chose the medical method or surgery under local anesthesia had a higher educational level, were from a higher socioeconomic class (based on occupation), and were more likely to be of North American or European origin. Women who initially had no preference or preferred surgical abortion under general anesthesia were more likely to be of African or South American origin. Eighty-six percent of the women were later interviewed. Valued characteristics most strongly associated with choice of the medical method included newness, efficacy and less invasiveness, the possibility of verifying the expulsion, and the naturalness of the method. Women who had

chosen vacuum aspiration tended to value the guarantee of medical precautions and the method's proven reliability.

Substantial proportions of women in all groups said they placed high value on methods that were less traumatic, less dangerous, more effective and less risky for future fertility but assigned these qualities to different methods. The possibility of failure was less important among those who chose the medical method, and avoidance of physical trauma was less important among those who chose vacuum aspiration under local anesthesia.

The majority of women in all groups expressed satisfaction with their chosen method. The medical abortion patients, however, were more likely than the surgical patients to be dissatisfied (12% vs. 4%). The authors note that the women appeared to have formed an impression that the new method was "magic" but later felt the abortion was "not so easy and quick" as they had expected. Satisfaction was lower when abortion was unsuccessful and when more side effects were recorded.

•*Grimes.* In this study, which tested a medical version of "menstrual regulation," the investigators randomly assigned 16 women who believed they were pregnant and wanted a medical abortion to use mifepristone alone or a placebo.[21] The delay in expected menses could be no more than 10 days. A pregnancy test was performed at admission, but the results were not provided to the investigators or the patients until after the study was completed. Effectiveness in inducing bleeding was clearly documented to be higher for mifepristone than for placebo, but side effects did not differ. In fact, two of four women who were not pregnant and received the placebo reported passing tissue, as did two of four women who were pregnant and received mifepristone. The participants expressed a favorable impression of the effectiveness of the drug, the lack of side effects, the privacy gained by not having to go to an identified abortion facility, and convenience. They said they would prefer a medical regimen if they needed an abortion in the future and stated that they would recommend the method to friends.

•*Thong.* To determine preferences in aspects of service delivery for medical abortion, the investigators studied 180 women in Scotland who chose this method.[22] The women were apparently participating in another study as well, because they received one of four different doses of mifepristone followed either by gemeprost administered as a vaginal suppository (52%) or by oral misoprostol (48%). The patients do not appear to have chosen the route of administration of the prostaglandin. The efficacy of the regimens (94–95%) did not differ by type of prostaglandin or route of administration, but patients using vaginal suppositories required more analgesia.

Patients were randomly assigned to be treated with the prostaglandin either in a sitting room with an outpatient atmosphere or in a hospital ward. Women were interviewed before discharge about their experience. Seventy-seven percent of women treated in the sitting room and 69% of those treated in the hospital ward said they preferred treatment in the sitting room. Virtually all of the patients were satisfied with the medical method (one woman was "unsure"), and 85% said they would recommend it to a friend. All 41 of those who had previously had a surgical abortion were satisfied with the medical regimen.

When asked about other preferences in service delivery, some women in the sitting room said they had wanted the option to lie down. About half would have liked to have a partner or friend with them, while a slightly larger group had not wanted a companion. One-quarter of the women said they would have preferred to have the abortion at home, an option that is not yet available.

•*Henshaw.* In a study combining patient choice and random allocation between medical abortion (mifepristone followed by prostaglandin vaginal suppository) and surgical abortion (vacuum aspiration under general anesthesia),[23] women who were eligible for both methods were asked if they were willing to be randomly assigned to a method, and those who were not were given their choice. The majority (53%) were willing to be assigned and were allocated to medical (27%) or surgical (26%) treatment. Those who declined to be assigned strongly preferred one method—surgical abortion (26%) or medical abortion (20%). (In an unpublished study using a slightly different design, women eligible for both methods were given a choice and only those who were undecided were randomly assigned to a method.[24] Of 1,300 patients in three countries, only 1% did not express a preference for medical or surgical abortion and were therefore assigned a method.)

Women who chose surgical abortion lived significantly further from the clinic, so they may have been deterred from medical abortion by the extra visits required. Of the women who chose surgery, 40% said medical abortion was "too slow," 39% said they preferred to be unconscious and 23% feared adverse physical effects from a medical procedure. Those who preferred the medical procedure expressed fear of surgery or anesthesia (59%), felt medical abortion was "more natural" (21%) and believed surgery was "too fast" (21%).

After treatment, the level of acceptability was extremely high among medical and surgical abortion patients who had chosen their method. Only 4% of each group said they would definitely choose the other method if another abortion were necessary; 95% of medical patients and 90% of surgical patients said they would choose the same method. The remainder—one medical patient and five surgical patients—were undecided. The women rated the two methods equally on all factors but one: They rated vacuum aspiration (under general anesthesia) as less painful.

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The investigators found a different pattern among the women who had been assigned to a method. Among these women, medical abortion ranked lower on six of 12 features; on the remaining six, the two methods received equal ratings. Most said they would choose the same procedure again, but the percentage who said they would do so was lower than it was among those who had chosen their method. Moreover, that percentage was lower among those who had a medical abortion (74%) than among those who had a surgical abortion (87%). Gestational age was the only predictor of dissatisfaction among women assigned to medical abortion: Of those who rated the procedure unacceptable, 95% had had the abortion at a gestation of 50 days or more. At earlier gestational ages, there were no differences among the assigned women in acceptability by method. Conversely, gestational age did not have any impact on acceptability among the women who chose their own method of abortion.

The acceptability of medical abortion in clinical practice will almost surely differ from that in a study of attitudes in the gen-

eral population of women. Rosén[25] interviewed both patients and nonpatients regarding their preference for medical or surgical abortion. The nonpatient group divided equally about which method they would prefer, but the women actually seeking an abortion strongly preferred medical abortion to surgical abortion (74% vs. 26%).

Provider Acceptability Studies

The acceptability of medical abortion to providers has been studied even less frequently than acceptability to patients. Yet women will not be able to choose medical abortion if providers reject the method and refuse to make it available.[26] Provider attitudes toward abortion depend on many characteristics, including personality and values.[27] Weisman and colleagues have documented that female providers are more likely than male providers to perform abortions.[28] If these female providers share women patients' bias toward medical abortion, the provider community may be even more positive about providing this new method.

The relative acceptability of medical and surgical abortion has been studied specifically among only one category of providers. Marwick and colleagues[29] reported the reactions of ward nurses in a clinic in Aberdeen, Scotland, to the introduction of medical abortion services using oral mifepristone and vaginal prostaglandin suppositories. The nurses, who had previously provided postoperative care for surgical patients, now provided direct care for the medical abortion patients as they awaited expulsion of the products of conception.

Of the 30 nurses studied, 63% reported no change in job satisfaction as a result of the introduction of medical abortion, 10% said their job was more rewarding and 27% reported decreased satisfaction. Nurses who reported greater satisfaction were pleased to have an opportunity to extend their professional skills. Those who found their jobs less rewarding cited distress at seeing the products of conception, the extra time needed for the medical abortion process (almost twice that for surgical abortion), and diminished rapport with patients.

This small study suggests that the introduction of medical abortion could alter job satisfaction because of adjustments in tasks. Providers should allow staff to redistribute their functions so that those who prefer to be more (or less) involved with medical abortion patients can seek suitable assignments.

Although less directly applicable, studies of provider attitudes toward termination of second-trimester pregnancy show that providers frequently seek to distance themselves from an unpleasant procedure: In one study, physicians said they preferred medical abortions because they did not need to be present at the expulsion of the fetus, and nurses said they preferred D&E procedures because the physician did the "distasteful" surgery.[30] Some have held that medical termination of pregnancy in the second trimester (usually using prostaglandin suppositories or infusions without mifepristone) is morally preferable to surgery.[31] Such considerations are less likely to be important with respect to abortion early in the first trimester. In fact, because earlier abortions are more acceptable to many professionals,[32] a medical method that allows very early abortion may be preferable to providers.

The service delivery environment will also influence the acceptability of medical abortion to practitioners. Government and insurance reimbursement policies may be important. Abortion providers who are harassed may prefer to provide medical abortion services because they are less visible than services provided in a surgical clinic. On the other hand, the medical method may increase the burdens of providing information and counseling to patients. The anxieties of patients waiting for an abortion to take place, over a period of days or perhaps weeks, may also place more demands on providers.[33]

Finally, providers respond to their patients' well-being as well as to their own practice constraints. Thus, any method that works well and is safe and comfortable for patients will be of interest to providers. If many patients express a preference for a specific method, provider interest is likely to be high.

Conclusions

Virtually all of the work assessing acceptability shows a strong preference for medical methods (generally about two-thirds of patients) among women seeking an abortion. Given a choice between surgery and any of several medical abortion methods, most eligible women appear to prefer the medical method.

In groups studied to date, satisfaction with the experience has been extremely high. When asked to measure medical abortion against surgical procedures, women generally report higher levels of satisfaction and are more willing to use the method again or to recommend it to others.

Paradoxically, medical abortion seems to produce slightly higher levels of dissatisfaction than does surgical abortion, along with higher levels of great satisfaction.[34] This disparity may result from unrealistic expectations about a new method or providers' lack of experience in identifying or counseling women likely to be unhappy with the characteristics of the method. Medical abortion may also have been oversold in the media or by medical personnel with little experience of medical abortion. As the method becomes better known, expectations may become more realistic.

As one might expect, women for whom a method fails are more often dissatisfied. Nevertheless, the 5% failure rate associated with medical abortion[35] can have only a small impact on overall levels of dissatisfaction, although for any one woman the experience of failure can be very unpleasant. Many women for whom medical abortion has failed, however, still rate the method as acceptable.

Generally, both prolonged bleeding and multiple visits are associated with less positive attitudes toward medical abortion. In addition, some prostaglandins used in medical abortion cause pain and gastrointestinal disturbances, although such problems are not severe enough to cause women to reject regimens involving these drugs. Newer regimens using oral misoprostol may substantially reduce the pain and cramping associated with use of prostaglandin suppositories or injections.

New approaches to the delivery of the two-drug regimen might also be considered. Because mifepristone is a very safe drug with few side effects, and because problems, when they occur, are usually associated with the administration of a prostaglandin, it might make sense to broaden the availability of the mifepristone while maintaining medical oversight of prostaglandin administration. This approach might increase both accessibility and acceptability of medical abortion, allowing women to initiate the procedure at a facility or office close to home and complete it at a comprehensive health care site.

The availability of safe and effective medical abortion in the United States would create a profound change by offering women the option of choosing their method. Choice appears to be associated with markedly lower levels of dissatisfaction[36] as well as valued for its own sake. If and when this change occurs, issues of patient and provider acceptability will be important in understanding how best to provide medical abortion and how to counsel women who are thinking of using it. It will also be important to monitor the adaptations in service delivery necessary

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to ensure broad availability and safe use of this important medical innovation.

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