Injectable Contraceptive Discontinuation and Subsequent Unintended Pregnancy among Low-Income Women

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ABSTRACT

Objectives. This study investigated rates of discontinuation of the recently introduced injectable contraceptive depot medroxyprogesterone acetate (DMPA) and postdiscontinuation rates of unprotected intercourse and unintended pregnancy.

Methods. A sample of 402 low-income, urban, minority women were interviewed when they initiated DMPA use and 12 months later.

Results. The 12-month life-table discontinuation rate was 58%, with half of the discontinuers stopping after only one injection. Menstrual changes and other side effects were the most frequently cited reasons for discontinuation. Approximately half of the discontinuers at risk for unintended pregnancy either did not make the transition to another contraceptive or used contraception only sporadically. The cumulative unintended pregnancy rate by 9 months postdiscontinuation was 20%.

Conclusions. DMPA initiators were at substantial risk for unintended pregnancy because most quickly discontinued use and did not make the transition to consistent use of another contraceptive. (*Am J Public Health.* 1997;87:1532–1534)

Introduction

Recognizing that unintended pregnancies constitute a major public health problem, *Healthy People 2000* has set a goal of reducing the proportion of pregnancies that are unintended from 56% to 30%.[1] The newest hormonal contraceptive to be approved for use in the United States, depot medroxyprogesterone acetate (DMPA, marketed as Depo-Provera), has the potential to assist in achieving that goal. The positive attributes of this injectable contraceptive are impressive: continuous effectiveness over a 3-month period, no user action required between injections, and efficacy levels comparable to sterilization. Moreover, DMPA has already attracted between 1.5 and 2 million users (Ellen Shainberger, Pharmacia & Upjohn, telephone conversation, August 1996).

However, DMPA's potential will not be achieved if acceptors quickly discontinue its use, a significant concern because of two of the contraceptive's attributes. First, DMPA is the only contraceptive that causes amenorrhea in a majority of users,[2] and little is known about how American women will react to the suppression of menstruation or to the irregular bleeding associated with use of this method.

Second, and of greater importance, it is much easier to stop using DMPA than it is to continue using it. Indeed, continuation requires a clinic visit every 3 months for an injection, while discontinuation requires that a woman do nothing. This is in marked contrast to intrauterine devices and Norplant, which do not require any user effort for continuation but do require a visit and medical procedure for discontinuation. Moreover, the fact that no provider visit is required for DMPA discontinuation can actually enhance a woman's risk of unprotected intercourse because it eliminates the opportunity for counseling about the need to initiate a new contraceptive method.

The contrast between DMPA and oral contraceptives is more subtle. There is no clear signal reminding a woman that it is time to revisit the clinic for a DMPA injection, whereas running out of pills provides a concrete reminder to make a visit to obtain a refill.

Because DMPA has been available to American women only since 1993, there is limited relevant information on rates of discontinuation and of subsequent unintended pregnancy. The only two published studies on DMPA under conditions of normal use in the United States reported 1-year discontinuation rates of 58% and 71%.[3,4] However, neither of these studies obtained information on the risk of pregnancy following discontinuation.

The present prospective study was designed to investigate rates of DMPA discontinuation and subsequent rates of unprotected intercourse and unintended pregnancy. We focused on poor and minority women because they are at greatest risk for unintended pregnancy.[1,5]

Methods

A sample of 491 women was selected from three large, hospital-based family planning clinics serving poor and ethnically diverse populations in New York City, Dallas, and Pittsburgh. The eligibility criteria, assessed through a waiting room screening form, were as follows: at least 15 years of age, initiating DMPA use, and had received contraceptive counseling. All eligible women were asked to participate in the study, and interviews were conducted with more than 95% of these women. Initial inter-

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views were conducted between June 1993 and October 1994.

Follow-up interviews were conducted by telephone at 1-year postinitiation. The reinterview rate was 82%, yielding a sample of 402 women for this analysis. Those who were lost to follow-up did not significantly differ in terms of age, parity, income, educational attainment, employment status, or race/ethnicity from women who were reinterviewed.

Life-table analyses were used to assess DMPA discontinuation rates and unintended pregnancy rates following discontinuation. Subgroup comparisons were based on the Wilcoxon–Gehan test.[6] Discontinuation of DMPA was defined as not having an injection within 4 months of the prior injection. Although women are instructed to return for injections every 3 months, we used a 4-month hiatus because DMPA can provide a few weeks of additional protection from pregnancy.[2] For the small proportion of the participants (5%) who discontinued DMPA and then had another injection prior to the completion of the study, the life-table analyses of discontinuation were based on time to first discontinuation.

Life-table analyses of unintended pregnancy rates were limited to the discontinuers at risk for unintended pregnancy (defined as those having sexual intercourse and not wanting to become pregnant at the time of discontinuation). Only the months of non-DMPA use were included in these analyses. All pregnancies that occurred within 9 months of discontinuation in women not wanting to become pregnant at the time of discontinuation were defined as unintended.

Results

Sample Characteristics

Reflecting the populations served by the recruiting clinics, the women were primarily from minority racial and ethnic backgrounds (67% Hispanic, 26% African American, and 7% White) and were of low socioeconomic status (62% had household incomes below $10 000, and 49% did not have a high school diploma).

The average age of the sample was 23.4 years; 31% of the participants were teenagers. The women had active fertility histories, given their ages: 67% reported at least two pregnancies, 65% had had at least one unintended pregnancy, and 53% were teenagers at the time of their first delivery.

Discontinuation Rates

The majority of women initiating DMPA use discontinued use within the first year. The cumulative life-table discontinuation rate at 12 months was 58%. Discontinuation tended to occur very rapidly, half (51%) of all discontinuers (31% of the sample) stopping after the first injection. An additional 18% of discontinuers stopped after the second injection.

Two sociodemographic characteristics, race/ethnicity and parity, had significant effects on rates of discontinuation. African Americans exhibited lower rates of discontinuation than Hispanics (the 12-month cumulative rates were 46% and 62%, respectively; $P < .01$). Women with two or more live births were less likely to discontinue DMPA than were women with fewer than two births (12-month cumulative rates of 52% and 63%, respectively; $P < .05$). Age, educational attainment, number of unintended pregnancies, intention to have additional children, and partner's attitude toward DMPA did not have significant effects on discontinuation rates.

Main Reason for DMPA Discontinuation

Discontinuers were asked an open-ended question about the primary reason they had discontinued DMPA. The majority of women attributed their discontinuation to the side effects of the method rather than to the difficulty of returning to the clinic every 3 months. Three quarters cited either menstrual side effects (amenorrhea/irregular bleeding [36%]) or other side effects (weight gain, headaches, mood changes, acne [39%]) as the primary reason that they discontinued. In contrast, only 12% focused on difficulties in returning to the clinic (inconvenient to keep returning [9%], hard to remember [3%]). Five percent discontinued because they were not sexually active, and only 4% cited wanting to become pregnant as their main reason for discontinuation. Four percent of the discontinuers mentioned other reasons.

Contraceptive Use Following DMPA Discontinuation

Analyses of post-DMPA contraceptive use and pregnancy were limited to the 87% of discontinuers at risk for unintended pregnancy (i.e., those who were sexually active and did not want to become pregnant at the time of discontinuation). Specifically, 6.5% were eliminated either because they stated, in the open-ended question just mentioned, that not being sexually active was the "main reason" for discontinuation or because they indicated, in a separate precoded question, that they had not had sexual intercourse since discontinuing DMPA. An additional 6.5% of discontinuers were eliminated either because they stated, in the open-ended question, that wanting to become pregnant was the "main reason" for discontinuation or because they indicated, in a separate precoded question, that wanting to become pregnant was a "factor" in their discontinuation decision.

Half of the at-risk group either did not make the transition to a new contraceptive or used a contraceptive only sporadically. Fully 33% never used a contraceptive method during sexual intercourse, 4% used birth control rarely, and 13% reported they sometimes used a contraceptive. The remaining 50% reported always using birth control. Among the discontinuers who reported having ever used a contraceptive, the most frequently used methods were oral contraceptives (55%) and condoms (31%).

Unintended Pregnancies Following DMPA Discontinuation

As anticipated by the large proportion of at-risk women who were not consistently using contraceptives, many DMPA discontinuers soon experienced an unintended pregnancy. The cumulative life-table pregnancy rates were 17% at 6 months post-DMPA discontinuation and 20% at 9 months postdiscontinuation. (It is important to note that no women became pregnant while using DMPA.)

Rates of unintended pregnancy were heavily influenced by frequency of contraceptive use and by whether or not the respondent was a teenager. Women who never, rarely, or sometimes used contraception had cumulative 9-month life-table pregnancy rates that were six times higher than those of women who always used contraception (34% vs 6%; $P < .001$). In addition, teenagers were at significantly greater risk for unintended pregnancy than were older women (9-month cumulative pregnancy rates of 31% and 15%, respectively; $P < .001$). Moreover, the combined effect of being a teenager and never or only sporadically using contraception resulted in an alarmingly high 9-month cumulative pregnancy rate of 53%.

Educational attainment, race/ethnicity, number of unintended pregnancies, and intention to have additional children

did not have significant effects on pregnancy rates.

Discussion

DMPA is one of the most effective methods of contraception presently available. Despite this, DMPA initiators were at substantial risk for an unintended pregnancy because most quickly discontinued the method and did not make the transition to consistent use of another contraceptive. The risk of unintended pregnancy was particularly high among teenagers.

DMPA discontinuation rates are especially high in comparison with those of the other new, long-acting contraceptive, Norplant. In our study of early Norplant discontinuation, among a comparable sample from the same clinics, only 8% discontinued during the first 6 months of use.[7] The DMPA cumulative discontinuation rate after two injections (42%) was more than five times higher than the Norplant 6-month rate. This rate of DMPA discontinuation is similar to the high discontinuation rates reported for oral contraceptives among clinic populations.[8,9]

The vast majority of women reported that they discontinued DMPA because they found the side effects unacceptable. This is notable because they received DMPA in clinic settings characterized by proficient and thorough counseling regarding side effects; DMPA adopters reported an average of 28 minutes of counseling, and 96% reported that a counselor had discussed the side effects that DMPA might have on their menstrual cycle.

One possible response to the high rates of discontinuation is the development of more aggressive clinic procedures for alerting women about upcoming DMPA appointments and for identifying and contacting women who miss injections. This follow-up may increase continuation rates by reminding women that they are reaching the end of their 3-month interval and by providing them additional counseling about side effects. Such follow-up also may reduce rates of unintended pregnancies among DMPA discontinuers by reinforcing the need to make the transition to an alternative contraceptive. These more intensive clinic efforts would be costly; thus, it is essential to evaluate their effects on DMPA continuation, alternate contraceptive use, and rates of unintended pregnancy.

The early experience with DMPA among low-income women is disheartening. It appears that the method's promise of enabling substantial numbers of American women to control their fertility is constrained as a result of unacceptable side effects and the level of effort required to continue using the method. These findings lend credence to the Institute of Medicine's recent call for a new generation of birth control methods to supplement the existing array of contraceptive options, which "fails to meet needs in significant populations."[10(p1)] □

Acknowledgments

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