Family Physicians' Practices Regarding Norplant

Thomas Tafelski, DO, PhD, and Christine Taylor, PhD
Toledo, Ohio

Background. Norplant is a method of long-term contraception that was introduced in the United States in January 1991. This study was designed to explore the extent to which family physicians currently offer and insert Norplant.

Methods. A cross-sectional descriptive survey design was used to elicit information from a random sample of family physicians belonging to the Ohio Academy of Family Physicians.

Results. Of the 242 (69% response rate) physicians responding to the questionnaire, 130 (54%) were offering Norplant to their patients and 60 (25%) were inserting the devices themselves. Physicians offering Norplant were more likely to be women, younger, board certified, and currently practicing obstetrics. The most common reasons cited by the 112 (46%) physicians who did not offer Norplant were concerns about side effects, lack of familiarity with the procedure, expense, and personal or religious reasons. Overall, 88% of physicians who offered Norplant to their patients were satisfied with the product's performance.

Conclusions. Over one half of the physician participants were offering Norplant as a contraceptive option for their patients. Physicians who offered the system were satisfied with its performance, and many expressed the belief that this form of contraception might be particularly well suited to certain patient groups.

Key words. Contraceptive agents, female; family physicians; physician practice patterns.
(J Fam Pract 1994; 39:452-456)

Norplant is a method of long-term contraception introduced in the United States in January 1991. It is reported to be one of the most effective reversible methods of contraception available, with a failure rate of approximately 0.6%.[1] The side-effect profile is reported to be low, with menstrual irregularities being the most common adverse occurrence.[2–6] Worldwide, over 750,000 women have used the Norplant system.[7] It appears to be well suited to certain patient populations, such as women over 35 who are opposed to tubal ligation or those who have been unsuccessful with other forms of contraception; patients who would benefit from effective long-term contraception that does not require regular compliance (ie, adolescents); and patients for whom estrogens are contraindicated.[8,9]

As of December 1992, an estimated 600,000 Norplant systems have been implanted in US women.[10] Subdermal insertion of the Norplant system is a relatively simple procedure that requires only a short (usually 1-day) training course for the physician. Family physicians have both the practice population (large numbers of premenopausal women) and the surgical skills to utilize Norplant as a contraceptive option for their patients.

The descriptive survey reported here was designed to explore the extent to which family physicians currently offer and insert the Norplant System. This study addresses several questions: Are family physicians familiar with Norplant, and are they offering it to their patients as a contraceptive option? Since Norplant insertion is a procedure that is easily learned, are family physicians being trained in insertion methods and inserting it themselves? Are there specific individual and practice characteristics associated with Norplant use? Finally, are the family physicians who insert Norplant satisfied with its performance as a form of contraception for their patients?

Submitted, revised, August 12, 1994.

From the Department of Family Medicine, Medical College of Ohio, Toledo. Requests for reprints should be addressed to Thomas Tafelski, DO, PhD, Department of Family Medicine, Medical College of Ohio, PO Box 10008, Toledo, OH 43699–0008.

ISSN 0094-3509

Methods

Sample

Using Cohen's sample-size tables,[11] it was determined that a 20% (352/1760) sample would be large enough to detect a moderate effect when a chi-square test for independence was used to measure differences in dichotomous categorical variables. The sample of 352 takes into consideration a 30% nonresponse rate. The sample was selected by drawing a systematic random sample of all members of the Ohio Academy of Family Physicians using the Academy mailing list. Concern for periodicity was examined and dismissed, as physician names from across the state were listed alphabetically with no other systematic sequencing. In the spring of 1993, each physician in the sample received a cover letter describing the purpose of the study and a short questionnaire. Follow-up letters were used to increase the number of respondents.

Procedure

A questionnaire was designed to elicit general information about family physicians' use of Norplant in their patient populations, the physicians' experiences inserting and removing Norplant, and their overall satisfaction with Norplant as a means of contraception. The questionnaire was piloted among the Medical College of Ohio Department of Family Medicine faculty.

The revised questionnaire consisted of 11 forced-choice questions and two open-ended questions. The questionnaire was divided into four sections that requested information about (1) individual physician characteristics (sex, age, board certification, years in practice); (2) practice characteristics (percentage of female patients in practice, type of practice, whether obstetric care was provided in the practice, and number and type of other procedures performed); (3) experience with Norplant insertion and removal; and (4) for those not offering Norplant, their reasons, referral practices, and plans, if any, to learn the procedure. The two open-ended questions requested opinions about overall satisfaction with Norplant and whether specific patient groups might be ideally suited to this form of contraception.

Responses of the participating physicians were analyzed. Student's *t* tests were used to examine differences in continuous variables, and the chi-square test for independence was used to examine categorical variables. The statistical significance for the chi-square and *t* test was set at $P = .05$. Responses to the open-ended questions were reviewed and sorted into categories based on similarity of concept.

Results

Demographics

Of the 242 (69% response rate) physicians responding to the questionnaire, 24% were women and 90% were board certified. Participants had an average age of 43 years (standard deviation [SD], 10.7 years), and an average of 13.2 (SD, 10.6) years in practice. Twenty-eight percent of responding physicians reported that they were currently in solo practice, 35% in group practice, 24% in a partnership, and the remaining 13% in academic positions. Fifteen percent of the physicians were currently providing obstetric care for their patients. Sixty-one percent of the physicians surveyed offered only one of the following other procedures to their patients: intrauterine device (IUD) insertion, flexible sigmoidoscopy, diaphragm fitting, upper endoscopy, colposcopy, and vasectomy. Thirty-seven percent of physicians offered two or more, and 2% did not indicate how many procedures they offered.

Study Questions

Of the 242 responding physicians, 130 offered Norplant to their patients. These were more likely to be women, younger, board certified, and currently practicing obstetrics than those physicians who did not offer Norplant. The physicians offering Norplant also reported that a greater percentage of their patients were women of childbearing age and that they performed additional procedures. Means and percentages for all characteristics are presented in Table 1.

Forty-six percent (112/242) of the responding physicians were not currently offering the Norplant System to their patients as a contraceptive option. The most common reasons cited by the 112 physicians who did not offer the Norplant System were "concerns about side effects," "lack of familiarity with the procedure," "expense," and "personal or religious reasons." A summary of the physicians' responses is listed in Table 2.

Of the 130 physicians offering Norplant, 60 (46%) were inserting Norplant themselves. Thirty-five percent of these physicians reported learning how to insert Norplant in a training course or workshop, 32% were self-taught, 20% were taught by another family physician, and 15% were trained by an obstetrician-gynecologist (multiple responses were allowed). The majority of these physicians reported limited experience with both insertions and removals. More than one half (56%) of the physicians who had removed a Norplant system found this procedure "technically difficult" to perform. Unacceptable side effects were listed as the most common reason for removal (70%), followed by general patient dissatisfaction (21%),

Table 1. Characteristics of Family Physicians Responding to a Survey about Norplant

Physician Characteristics	Physicians Who Offer Norplant	Physicians Who Do Not Offer Norplant	*P* Value
Age, y (SD)	38.8 (6.5)	47.8 (12)	<.0001
Years in practice, n (SD)	9.2 (6.7)	18.0 (12)	<.0001
Female, n (%)	41/128 (32)	16/109 (15)	<.003
Board certified, n (%)	124/129 (96)	91/109 (83)	<.003
>30% of practice composed of premenopausal women, n (%)	45/126 (36)	22/109 (20)	<.01
Offers obstetric care to patients, n (%)	34/130 (26)	3/110 (3)	<.0001
Performs 2 or more procedures other than Norplant insertion, n (%)	60/130 (46)	29/110 (26)	<.003

NOTE: Some physicians responding to the questionnaire did not provide all of the demographic information requested.
SD denotes standard deviation.

and patients wishing to become pregnant (9%). Table 3 summarizes respondents' experiences inserting and removing Norplant.

Fifty-four percent (70) of the physicians who offered the Norplant System to their patients, did not currently insert the device themselves. Of these, 62% were currently referring patients to obstetricians-gynecologists, 28% to other family physicians, and 10% to Planned Parenthood. Thirty-five percent of this group responded affirmatively when asked if they planned to become trained to insert Norplant in the future. When asked why they did not currently insert the devices (multiple responses allowed), 43% reported that they had not "gotten around to scheduling the training yet," 41% did not feel that they had a large enough patient population to warrant the training, 14% reported that their "partner" was trained and performed the insertions, and 9% stated that the procedure should be performed by a specialist. Other miscellaneous responses included "too hard to remove" (n=2), no patient interest (n=2), "too expensive" (n=2), "don't approve of mechanism of action" (n=2), and concern for "liability risk" (n=2).

Overall, 88% of physicians who offered Norplant to their patients were satisfied with the product's performance. Among physicians who inserted the system themselves, the approval rate was even higher (95%). Respondents were invited to elaborate on the their response to the "satisfaction" question. Of the 44 physicians choosing to provide more details, those satisfied with the Norplant System cited its reliability, convenience, and long-term cost-effectiveness. The physicians who were dissatisfied with the system cited patient problems with abnormal menses or irregular bleeding, side effects, and difficulty in removal.

One hundred forty-five physicians responded to the open-ended question: which patient groups (if any) would be best suited to this form of contraception? After common responses were sorted, six major categories

Table 2. Physician Responses to the Question: If You Do Not Offer Norplant, Why Not? (N=112)

Response Option*	No. (%)
Not familiar with Norplant	18 (16)
Not appropriate for my patients	15 (13)
Personal or religious reasons	16 (14)
Too many side effects	21 (19)
Too expensive for my patients	15 (13)
Other	
No interest from patients	9 (8)
No training	8 (7)
Choose to refer	6 (5)
Miscellaneous	6 (5)

**Physicians could choose more than one option.*

Table 3. Physicians' Responses to Questions About Their Experiences with Inserting and Removing Norplant

Question	Responses No. (%)
How many Norplant devices have you inserted?	
≤5	30 (50)
5–10	10 (17)
11–15	0 (0)
16–20	12 (20)
>20	8 (13)
Have you removed any Norplant devices?	
Yes	26 (43)
No	34 (57)
If you have removed any Norplant devices, how many?	
≤5	24 (92)
6–10	2 (8)
>10	0 (0)
Was removal difficult?*	
Yes	14 (56)
No	11 (44)

**One physician to whom this question was applicable did not respond.*

emerged, accounting for 67% of the comments. The most common responses included: "young patients with compliance problems" (28%), "women not wanting children within 5 years" (16%), "older women not sure about sterilization" (10%), "any unreliable pill taker" (9%) and "patients who cannot take estrogens" (4%). The remaining 33% of respondents cited a wide variety of other groups ranging from "mentally handicapped" to "intelligent active professionals."

Discussion

The results of this study suggest that a significant number of Ohio family physicians are familiar with Norplant and offer it to their patients as a contraceptive option. Of the 242 responding physicians, 130 (54%) were offering Norplant and 60 (25%) were inserting the device themselves. Only a small number (16%) in our study were unfamiliar with Norplant. Many of our responders stated their belief that Norplant might be especially suited to certain patient populations, in particular, younger patients and those who have difficulty complying with other contraceptive methods. These populations have been identified in other studies as potentially benefiting most from the use of Norplant.[7,8]

Although the majority of the physician sample offered Norplant, a sizable number (46%) did not. This might be expected, considering the limited amount of time the procedure has been available in the United States. The reasons cited for not offering Norplant varied widely, with concern about side effects mentioned most often. To date, research suggests that Norplant appears to be a safe form of contraception that has been well tolerated by most patients.[12–15] Most of the current research, however, has been conducted in third-world countries where patients may be more tolerant of the side effects. These women may not provide a valid comparison group for US women, whose expectations might be different.

The cost of Norplant (approximately $500 per patient) was another frequently cited reason. In Ohio, Medicaid covers the cost of Norplant, but some third-party payers do not. If costs decrease or if coverage is extended to private payers, Norplant will probably become a more attractive option. Both cost and side effects have been reported in previous studies as limiting factors to the use of Norplant.[7,8]

An analysis of physician characteristics associated with an increased use of Norplant revealed that a significantly higher percentage of physicians offering Norplant were women. One possible explanation might be that female physicians are more sensitive to the health needs and concerns of other women and are more likely to provide the entire spectrum of contraceptive options. Physicians offering Norplant were also more likely to practice obstetrics and perform more procedures (Table 1). It is reasonable to expect that physicians who currently practice obstetrics and are interested in other procedures might be more inclined to learn and practice a new procedure such as Norplant insertion.

Of the entire study sample, 25% of the physicians are both offering and inserting Norplant. This number may seem small until the performance rates of other procedures by family physicians are taken into consideration. The percentages of other procedures performed by the study sample indicate that some physicians are more procedurally oriented than others, and that not all physicians can be expected to perform every procedure. For example, flexible sigmoidoscopy, an important cancer screening procedure taught to all family practice residents, was performed by 53% of the responding physicians. Fitting a diaphragm was performed by 43%, and colposcopy, a relatively new procedure, was performed by only 15%. That 25% of our study participants insert Norplant suggests that it is a procedure which can be mastered by family physicians.

A review of the characteristics of the study participants showed that the sample was comparable in demographic makeup to the entire Ohio Academy of Family Physicians, with a slight overrepresentation of female physicians in the study sample (23% vs 18%). With these comparisons in mind, we are confident that the views and attitudes of our study population concerning Norplant are representative of the views of family physicians in Ohio.

One of the limitations of this study is that it is regionally based and may not reflect the opinions and practice of family physicians in other parts of the United States. A second limitation concerns the timing of the study. Norplant is new to the United States, and most of the physicians in our study have had relatively limited experience with insertion (50% had inserted five or fewer systems) and even less experience with removal. The physician attitudes expressed here may change as clinicians gain more experience. A follow-up study in 2 years would seem appropriate to measure the effect of experience on overall satisfaction.

This study was designed to provide baseline data concerning the use of Norplant by family physicians. Norplant insertion appears to be easily learned and within the realm of the family physician. Being able to insert Norplant provides another opportunity for family physicians to broaden the scope of services they offer and thus improve the continuity and comprehensiveness of care they provide to patients. Further studies of patient opinions and satisfaction are necessary for a full evaluation of the overall acceptance and utilization of this promising new procedure.

References

1. Shoupe D, Mishell DR. Norplant: subdermal implant system for long-term contraception. Am J Obstet Gynecol 1989; 160:1286–92.
2. Flattum-Riemers J. Norplant: a new contraceptive. Am Fam Physician 1991; 44:103–8.
3. Balogh SA, Klavon SL, Basnayake S, Puertollano N, Ramos RM, Grubb GS. Bleeding patterns and acceptability among Norplant users in two Asian countries. Contraception 1989; 39:541–53.
4. Singh K, Viegas OAC, Ratnam SS. Norplant contraceptive subdermal implants: one year experience in Singapore. Contraception 1988; 37:457–69.
5. Diaz S, Pavez M, Miranda P, Johansson EDB, Croxatto HB. Long-term follow-up of women treated with Norplant implants. Contraception 1987; 35:551–67.
6. Zimmerman M, Haffey J, Crane E, Szumowski D, Alvarez F, Bhiromrut P, et al. Assessing the acceptability of Norplant implants in four countries: findings from focus group research. Stud Fam Plann 1990; 21:92–103.
7. Shoupe D, Mishell DR, Bopp BL, Fielding M. The significance of bleeding patterns in Norplant implant users. Obstet Gynecol 1991; 77:256–60.
8. Berenson AB, Wiemann CM. Patient satisfaction and side effects with levonorgestrel implant (Norplant) use in adolescents 18 years of age or younger. Pediatrics 1993; 92:257–60.
9. Ballagh SA, Mishell DR. Who is a candidate for Norplant? West J Med 1992; 156:649.
10. Huggins GR, Wentz AC. Obstetrics and gynecology. JAMA 1993; 270:234–6.
11. Cohen J. Statistical power analysis for the behavioral sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, 1988: 258.
12. A subdermal progestin implant for long-term contraception. Med Lett 1991; 33:17–20.
13. Basnayake S, Thapa S, Balogh SA. Evaluation of safety, efficacy, and acceptability of Norplant implants in Sri Lanka. Stud Fam Plann 1988; 19:39–47.
14. Cullins VE, Blumenthal PD, Remsburg RE, Huggins GR. Preliminary experience with Norplant in an inner city population. Contraception 1993; 47:193–203.
15. Singh K, Viegas OAC, Fong YF, Ratnam SS. Acceptability of Norplant implants for fertility regulations in Singapore. Contraception 1992; 45:39–47.