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Amenorrhea: An Advantage Rather than a Complication of Depot Medroxy Progesterone Acetate Injectable Contraceptive

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Abstract: In part of a vast longitudinal multi-centric research program being conducted about menstrual complications of DMPA in northwestern Iran, we studied the satisfaction and personal ideas of 411 amenorrheatic DMPA users about bleeding loss and amenorrhea caused by DMPA and effect of these ideas on its acceptability. Of those 411 persons who didn't have even one day of menstruation one month after injection, 360 didn't have even one day of menstruation after 60 days. These people were asked if they were satisfied with menstrual cessation caused by DMPA injection or not? 73.4% of participants declared their satisfaction with this complication of DMPA. No statistically significant difference was shown between type of menstrual pattern and weight, previous history of irregular menses and previous history of abortion. But breastfeeding and a history of cesarean section affected the menstrual pattern during the month after a DMPA injection. 57.5% of women very satisfied with amenorrhea caused by DMPA compared with 5.7% of those very dissatisfied with it, continued to use DMPA at least for six months.

Key words: Depot medroxy progesterone acetate, long acting contraceptives, complications, amenorrhea

INTRODUCTION

Throughout the world, 45% of married women in fertility age use contraception, in which the share of eastern Asian countries is 69% while the share of African countries is 11% (Speroff *et al.*, 1999). Despite the efficacy of oral contraceptives, missed pills are quite common and contribute to unintended pregnancy. Many women in all population categories would benefit from the convenience and reliability of non-daily hormonal contraceptives. The highest efficacy rates with typical use are associated with agents that require minimal user participation (i.e., Depo-Provera, Mirena). Compared to daily regimens, all non-daily options offer increased convenience and may contribute to improved patient adherence. However, barriers to use may exist (Freeman, 2004).

Depot medroxy progesterone acetate (DMPA), approved by the Federal Drug Administration as an injectable contraceptive in 1992, is used by millions of women worldwide (Harel *et al.*, 1996; Kaunitz, 1998). It is a scientifically effective, medically safe and legal contraceptive which is injected every three months. Its affectivity reaches up to 99.7% in the first year of use. A WHO (1994) study had shown that its effectiveness is comparable to bilateral tubal ligation.

Most women in clinical studies of DMPA have experienced menstrual irregularities. As use continues, amenorrhea becomes common, reported by 57% of the women by the end of a year of treatment. Other side

effects includes weight gain, headache, nervousness, abdominal pain or discomfort, dizziness and asthenia. In some studies the social consequences of side effects are perceived to be more important than their biological manifestations and together with the fear of sterility, may result in a preference for other methods (Castle, 2003). Although there have been many studies about role of bleeding disorders in acceptability of DMPA but there is not enough research to find out what are the ideas of its users about amenorrhea. Present aim of study was to see if DMPA contraceptive users consider bleeding loss as a bothersome complication or are satisfied with it.

MATERIALS AND METHODS

Study was conducted between years 2000 to 2004. Studied population included all women in fertility age referred to Ardabil health centers willing to be injected with DMPA. In an objective-oriented Sampling 917 women referred to health centers of Ardabil, Iran were subjected to the study. The requirements for entering this study were as following: not having a previous history of DMPA injection, lacking any endometrial or uterus diseases and lacking female hormones disturbances.

Questionnaire was the main data-gathering tool. In the observational part of study seven questionnaires were designed and completed by interviews at the first visit, at the end of first month, every three months up to one year or discontinuance and last one at the

discontinuance time. These questionnaires were completed by midwives and family health personnel who are responsible for delivering maternity care services in health centers.

Microsoft access database was used for entering the data and finally analyzed with SPSS statistical package. Chi-square and t test and One way ANOVA were used to analyze data.

Because of ethical issues, those women developing severe bleeding after DMPA injection were excluded from the study and treated by our gynecologists.

RESULTS

According to the questionnaire filled one month after injection for 820 women, 409 persons (49.8%) experienced bleeding or spotting (even for one day) and 411 (50.1%) persons did not report any bleeding or spotting. The average duration of bleedings was 7.78 days with standard deviation of 7 days. Among women experiencing menstrual disturbances during the first month, 12 persons (1.4%) had vigorous and 197 persons (24%) light/moderate bleeding, respectively.

Table 1: Ideas of those DMPA users who developed a menstrual cessation after two months of DMPA injection

	Frequency	Valid (%)
Very satisfied	145	40.3
Moderately satisfied	119	33.1
No idea	35	9.7
Relatively dissatisfied	42	11.7
Very dissatisfied	19	5.3
Total	360	100.0

Table 2: Satisfaction with menstrual cessation caused by DMPA in different levels of education

		Illiterate	Primary schools	High school	Academic	Total
Very satisfied	Count	35	74	31	5	145
	% within education	51.0%	21.4%	3.4%	100.0%	
Moderately satisfied	Count	36	57	23	2	118
	% within education	30.5%	48.3%	19.5%	1.7%	100.0%
No idea	Count	9	19	6	1	35
	% within education	25.7%	54.3%	17.1%	2.9%	100.0%
Relatively dissatisfied	Count	12	26	2	2	42
	% within education	28.6%	61.9%	4.8%	4.8%	100.0%
Very dissatisfied	Count	7	7	4	1	19
	% within education	36.8%	36.8%	21.1%	5.3%	100.0%
Total	Count	99	183	66	11	359
	% within education	27.6%	51.0%	18.4%	3.1%	100.0%

Table 3: Effect of satisfaction with menstrual loss caused by DMPA injection on continuing using DMPA as a contraceptive for six months

		Continued for six months	Discontinued at three months	Total
Very satisfied	Count	77	57	134
	% within	57.5%	42.5%	100.0%
Moderately satisfied	Count	37	69	106
	% within	34.9%	65.1%	100.0%
No idea	Count	7	18	25
	% within	28.0%	72.0%	100.0%
Relatively dissatisfied	Count	7	21	28
	% within	25.0%	75.0%	100.0%
Very dissatisfied	Count	1	12	13
	% within	7.7%	92.3%	100.0%
Total	Count	129	177	306
	% within	42.2%	57.8%	100.0%

Chi-square = 26, p<0.01

Average body weight was 62.3 kg with standard deviation of 12.5 kg. The average age of cases was 28.7 years with standard deviation of 6.6. 874 persons (95.3%) were housewives and the rest were employed.

No statistically significant difference was shown between type of menstrual pattern and weight, previous history of irregular menses and previous history of abortion. But breastfeeding and a history of cesarean section affected the menstrual pattern during the month after a DMPA injection. That is to say those who had a cesarean section before, were less likely to have amenorrhea (p<0.01). Also those who didn't breastfeed were less likely to have amenorrhea either (p<0.05).

Of those 411 persons who didn't have even one day of menstruation one month after injection, 360 didn't have even one day of menstruation after 60 days. These people were asked if they were satisfied with menstrual cessation caused by DMPA injection or not? 73.4% of participants declared their satisfaction with this complication of DMPA. Further information is given in Table 1.

We didn't find any statistical relation between education level and idea about menstrual cessation details of which are given in Table 2.

We entered those who complained of menstrual cessation into a randomized clinical trial of treating this complication (results of which will be published separately) and only followed up those who didn't receive a drug for treating the menstrual loss. We then analyzed the role of satisfaction with menstrual loss caused by DMPA injection on continuing using DMPA as a contraceptive for six months the results of which is given in Table 3 and Fig. 1.

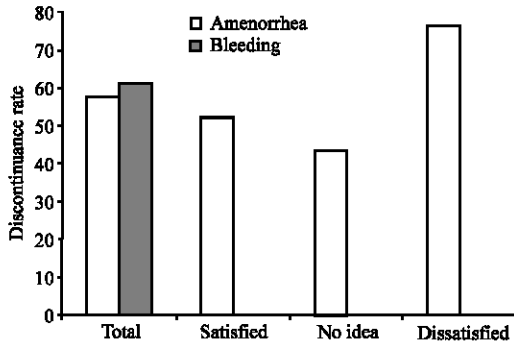


Fig. 1: Discontinuance rate after first injection of DMPA in woman developing Amenorrhea compared to Irregular Bleeding. *: The first column of this graph compares discontinuance rate between those women developing Amenorrhea and Irregular Bleeding. Other columns compare discontinuance rate of women developing amenorrhea with different satisfaction ideas about amenorrhea

At the end of first three months, 312 persons (41.1%) of 759 women repeated the injection and continued this method.

Non formal interviews with some of those women that discontinued using DMPA after first injection contrary to their high satisfaction with amenorrhea caused by DMPA indicated their worried ness about getting pregnant or possibility of amenorrhea harmfulness to their health.

DISCUSSION

In this study, the rate of bleeding and spotting in first month was 49.8% and the rate of menstrual cessation was 50.1%. The distribution of different menstrual complications caused by DMPA has been various in different studies so that in some studies, bleeding or spotting and in some others, bleeding discontinuance have been the dominant complications. The dominant complications were reported as bleeding in European countries and as menstrual loss in African countries (Belsey, d'Arcangues and Carlson 1988b; Belsey and Peregoudov, 1988). Said *et al.* (1996a) discussed this to be due to different pharmacokinetics of DMPA in different populations referring to documentation by Graza-Flores *et al.* (1994) (Graza-Flores *et al.*, 1994). Albeit, it is evident that with the progress of time since onset of DMPA injection, the rate of bleeding and spotting declines and the dominant complications turns to the bleeding discontinuance and amenorrhea.

Present finding didn't show statistical relation between weight and form or pattern of menstrual disturbances although not compatible with Belseys (1988a) statements but it was consistent with Said's *et al.* (1996b) findings.

In this study, the rate of continuance in method was 41.1% at the end of the first three months. Potter *et al.* (1997) reported this rate as 67% in North Carolina and Paul *et al.*, (1997) reported it as 75%. Although many researchers discuss of bleeding disorders caused by DMPA as a major cause of dissatisfaction and noncompliance of it, but our study showed that more than 70% of those women developing amenorrhea were satisfied with this effect of DMPA. Except for Freeman (2004) stating that many women are comfortable with or even prefer amenorrhea, no other study was found to discuss DMPA users preference for amenorrhea caused by it. he has concluded that this finding highlights how important it is for clinicians to avoid making assumptions about a patient's contraceptive preferences (Freeman, 2004).

In this study 57.5% of women very satisfied with amenorrhea compared with 5.7% of those very dissatisfied with it, continued to use DMPA at least for six months. Although the difference is quite high indicating that personal idea about side effects of DMPA has a major role on its acceptability, but as some of the users quite satisfied with amenorrhea didn't continue using it we may include the worried ness of the women if they have got pregnant or if the amenorrhea is harmful to their health, to be a major reason for discontinuing in this group.

Hubacher *et al.* (1999) has stated that women who received information on DMPA efficacy, side effects and amenorrhea were more likely to continue using DMPA compared to those who did not receive such information Likewise, women who were told about the possibility of amenorrhea were 2.5 times more likely to continue using DMPA compared to those who did not receive that information.

On the other hand as many people in developing countries specially women have some grades of Iron deficiency anemia, we can discuss of another advantage for DMPA when it gives rise to bleeding cessation.

As to think if amenorrhea caused by DMPA can be of any harm to ones health some studies are done. In a clinical trial study conducted by our team it was shown that treating bleeding loss caused by DMPA can increase its acceptability and continuance rate (Sadeghi-Bazargani *et al.*, 2006).

Endometrial PRAB, PRB, ERalpha and ERbeta expression in glands and stroma has not been shown to

be different between DMPA users who had frequent or prolonged bleeding and amenorrhoeic DMPA users (Sereepapong *et al.*, 2004). Chotnopparatpattara showed that stromal Progesterone Receptor (PR) score in DMPA subjects with amenorrhea was significantly higher than those with bleeding and By contrast, the PR score in glandular endometrium was not significantly different between the groups (Chotnopparatpattara *et al.*, 2003). Women with amenorrhea have neither symptoms nor genital atrophy that similar to menopausal syndrome. No correlation amenorrhea period and E2 or FSH levels as well as no significant relationship between estrogen effects by vaginal cytology and the time period of amenorrhea has not been shown. And though DMPA may induce amenorrhea, it will not lower serum E2 levels and the inhibition of ovarian function is reversible (Zhu *et al.*, 1999). Although there has been studies relating diminished bone density to amenorrhea, we are not convinced that lower bone density in DMPA users is due to amenorrhea caused by it (McGee, 1997).

CONCLUSIONS

Amenorrhea is not considered as a bad complication in majority of Iranian DMPA users in Ardabil and most of them are satisfied with it. To decrease discontinuance rate of DMPA contraceptive the following suggestions are recommended:

- Provide a complete consultation before prescribing DMPA as a contraceptive.
- Give information about the facts that amenorrhea caused by DMPA is harmless and maybe beneficial especially if they are anemic.
- Let the users know that DMPA has a very small failure rate and an amenorrhea after a standard DMPA injection is rare to be because of pregnancy and if so no harm to baby has been proven to exist because of DMPA.
- Let the users have pregnancy tests if they are much worried even after your explanations.
- Treat amenorrhea if the users are complaining of it and want it to be treated.

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