International Journal of Basic and Applied Medical Sciences ISSN: 2277-2103 (Online)
An Open Access, Online International Journal Available at http://www.cibtech.org/jms.htm
2019 Vol. 9(1) January-April, pp. 30-36/Jain and Sharma
Research Article

ANTARA (DEPOT MEDROXY PROGESTERONE ACETATE) - ACCEPTABILITY AND COMPLIANCE IN PUBLIC SECTOR: A PROSPECTIVE STUDY IN A TERTIARY CARE CENTER

Rekha Jain and Manisha Sharma*
[1]*Hindu Rao hospital and NDMC Medical College, NDMC, Delhi, India*
[2]*Department of Obst. & Gynae., NDMC Medical College and Hindu Rao Hospital, NDMC, Delhi, India*
**Author for Correspondence: drmanishasharma63@gmail.com*

ABSTRACT
Depot Medroxy progesterone acetate (ANTARA) is an effective and safe method for birth spacing and an ideal contraception for patients with contraindications to estrogen. It has not been identified as a successful contraception because of delay in the return of fertility and limited acceptability due to menstrual problems associated with its use. A prospective study was conducted for a period of 15 months in FP unit of Hindu Rao hospital and NDMC medical college to see the acceptability and compliance of MPA in public sector. Patients attending the FP unit for contraception were counseled about the availability of contraceptives in the basket and women who were willing for MPA were given first dose of Antaraand then followed for side effects and compliance till four doses. 180 patients agreed for first dose of Antara during 1st 9 months of study period. 87.7% of the women were in the age group 20-30 years. 80.5% women accepted Antara as interval contraception, 31 patients accepted along with medical termination of pregnancy while 4 women accepted it 6 weeks postpartum. 33.3% women were primi para and 58.8% patients were para 2. Before accepting MPA 75.5% were not using any formal contraceptive while 24.5% women were using some prescribed method of contraception. Compliance after 1st, 2nd and 3rd dose was 51.1%, 28.8% and15.0% respectively and discontinuation rate after 3 months, 6 months and 9 months was 48.8%, 71.1% and 85.0% respectively. Menstrual irregularity was seen in 68.47% and amenorrhea (52.17%) was the commonest side effect followed by spotting. MPA (Antara) is a convenient long acting reversible contraceptive but has high discontinuation rate. Pre-administration counseling is essential tool to minimize attrition because of the menstrual changes which occur in most of the patients which can be reduced with effective counseling at the start.

Keywords: *Medroxy Progesterone Acetate, Injectable Contraception, Long Acting Reversible Contraception*

INTRODUCTION
India's longstanding Family Planning (FP) program, which started in 1952 has traditionally focused on limiting family size by female sterilization with more than 50% relying on this and less focus and access to spacing method (vision FP2020, IIPS DLHS-3 2007-08). There was need to increase awareness of and access to spacing methods. Recognizing these needs, the Government of India has undertaken multiple strategies for increasing access to effective methods for spacing births (vision FP2020).The family welfare program is mainly based on a "Cafeteria approach"; whereby a number of methods of contraception are offered to the eligible couples. Earlier, India had only four options in the basket of contraceptive methods in the public sector: condom, sterilization, pills and intrauterine device (FHI 2010). In 2017 Government of India expanded its basket of contraception by adding newer contraceptives like Chaya (Centchroman tablet) and MPA injection (Antara). MPA, a reversible injectable contraceptive which has been in useas a spacing method since 1994 in the private sector of the country is being launched under the union ministry of Health & Family welfare Initiative in public sector in the name of Antara program.
The use of safe and effective contraception is the need of the hour in India, which has one of the world's largest and fastest growing population (Finer *et al.*, 2011). An ideal contraceptive should suit an

individual's personal, social, and medical needs, however an ideal contraceptive which is safe, effective, with minimum side effects and less frequent administration has not been acknowledged as yet. Several factors may affect the contraceptive prevalence in any health facility. These include the range of methods available, clients' choice, clients' religious and cultural beliefs, spouse influence, bias of the health personnel, side effects of contraceptive method and perception of method effectiveness (Chigbu *et al.,* 2010, Mitchell HS 2004). As there is no ideal contraceptive which can appeal to all ages, health care providers need to offer various options to the client who has a right to exercise her choice. Patients must weigh the benefits and risks of the contraceptive method they decide to initiate and continue.

MPA exists as an effective, safe and convenient method for birth spacing and is ideal for patients with contraindications to estrogen use and certain medical conditions. Injectable contraceptive reduces the need of daily consumption (e.g. combinational pills) and does not depend upon sexual intercourse (barrier methods) and eliminates the need for partner cooperation (Warwick, 1988**)**. It requires minimal patient compliance with an easy three monthly administration schedule with window period of 2 weeks earlier and 4 weeks later from the scheduled date and is as effective as sterilization (Kaunitz, 2001). In addition, there are many non-contraceptive benefits to Depo-Provera use. The contraceptive prevalence of injectable contraception is 3.5% worldwide. It is 15% for Sri Lanka, 10% for Nepal, 7% for Bangladesh, 5.9% for Bhutan and 2.7% for Pakistan whereas nationally the current use of DMPA is only 0.1% (IIPS 2007 NFHS- 3 2005-06).

Although Depot MPA is considered as a highly effective, long acting reversible contraceptive, it has not been identified as a successful contraceptive because of delay in the return of fertility and limited acceptability due to menstrual problems associated with its use. The present study was undertaken to study the acceptability and compliance of MPA/Antara, a long acting reversible contraceptive in public sector.

MATERIALS AND METHODS

This was a prospective study conducted in family planning unit of Hindu Rao Hospital and NDMC medical college for a period of 15 months from October 2017 to December 2018. During this period women who attended the family planning unit for contraception whether post-partum, post-abortal or seeking contraception in the interval period were counseled for long acting contraceptive method like MPA and about their possible side effects. Women were also given the choice of all the contraceptives available in the basket depending upon their needs and those willing for any of them other than injectable MPA were accordingly provided. The women opting for MPA (Antara) injectable contraceptive during first nine months of the study period were recruited in the study. A detailed history, physical and gynecological examination was done. Body weight and blood pressure was measured at baseline and every 3 months thereafter.

Exclusion criteria included: pregnancy, less than 6 weeks postpartum, hypertension, diabetes, liver disorder and vaginal bleeding of unknown etiology. Women who gave informed consent were given injection Medroxy Progesterone Acetate (MPA) 150 mg deep intramuscular in the upper lateral gluteal region using 23-24 gauge needle free of cost. The schedule consisted of injection within day 5 for menstruating women, within day 7 for post-abortal women and 6 weeks postpartum for recently delivered women. Details of the patients were filled in the MPA Card provided by Government of India which included the Patient's socio demographic details, obstetric and menstrual history, weight, blood pressure and questions related to their contraceptives status and compliance were noted. Women were counseled for three monthly follow up schedule benefits, its adverse effects and were then followed for next dose, menstrual problem, any side effects and reasons for non-compliance for one year or till 4^{th} dose schedule. All the patients were provided with MPA (Antara) card which included details of the patients and scheduled next dose of Antara and follow up visits. Subsequent injections were given at three monthly intervals. Women who did not report for the next doses were asked telephonically to return for further dose, if she was not complaint then reasons was noted in her MPA card. Socio demographic variables,

acceptance compliance, Dropout rate and various adverse effects or any problem such as weight changes, menstrual problem (increase or decrease bleeding), amenorrhea, headache weight gain, bone pains as well as other questions, like their reasons for using/not using the methods were studied and analyzed using SPSS software version 17.

RESULTS

Total 180 first dose of MPA (Antara) was given during first9 months of study period. 145 (80.5%) women accepted MPA (Antara) as interval contraception, 17.2% accepted along with medical termination of pregnancy (MTP) while 2.2%women accepted postpartum after 6 weeks of delivery. Distribution of women according to age, parity and education status is shown in table 1. Only 24.5% women were using prescribed contraceptive method before adopting for MPA while 75.5% were not using any method or just following natural method of contraception (table 2). No contraceptive failure and no pregnancy were seen during their follow up period.

Table: 1 Distribution of women according to age, parity and education status

	N=180	Percentage
Age group(years)		
20-25 years	78	43.33%
26-30years	80	44.44%
31-35years	16	8.88%
>35years	6	4.77%
Parity		
Para 1	60	33.33%
Para2	106	58.88%
Para3	12	6.66%
Para4 andabove	2	1.11%
Education status		
No formal education	18	10.0%
High school	112	62.2%
Senior secondary	32	17.7%
Graduate	16	8.88%
Postgraduate	2	1.11%

Table 2: Distribution of women according to previous contraception used before adopting Antara

Contraceptive used	N=180	Percentage
No formal contraceptive	136	75.5%
IUCD	20	11.1%
Oral pills	7	3.88%
Condom	17	9.44%

Table 3: Distribution of women according to interval between last pregnancy and time of acceptance of first dose of Antara

Interval between last pregnancy and time of acceptance of Antara	N=180	Percentage
Associated with MTP	31	17.22%
6 weeks post-partum	4	2.22%
6weeks to 1 year	26	14.44%
1-3years	71	39.44%
3-6yeats	48	26.66%
6-9 years	9	3.96%
>9 years	7	3.08%

Table: 4 Distribution of women according to continuation of Antara

Dose (Antara)	Total patients	Percentage	Drop out
1st dose	180	100%	
2nd dose	92	51.11%	48.88%
3rd dose	52	28.88%	71.11%
4th dose	27	15.0%	85.0.%

180 patients enrolled in study accepted first dose of MPA during study period. 92(51.1 %) came for scheduled 2nd dose while 88 (48.88%) patients dropped out after 1st dose and dropped out rate increased to 85% at the time of 4th dose (table 4).Out of 92 patients who came for further dose of Antara, some had side effects as shown in table 5. Menstrual irregularity was the most common side effect (68.47%) while amenorrhea was seen in 52.17%.

Table: 5 Side effects as reported by patients during further dosing

Side effects	Number of women reporting (92)	Percentage
Menstrual irregularity	63/92	68.47%
Amenorrhea	48/92	52.17%
Oligomenorrhoea	2/92	2.17%
Spotting	12/92	13.04%
Menorrhagia	1/92	1.08%
Headache	2/92	2.17%
Weight gain / Hypertension	0	0%

Table: 6 Distribution of patients depending upon duration of amenorrhea

Duration of amenorrhea	Number of women(n=48)	Percentage
1-3 months	22	23.91%
3-6 months	15	40.21%
6-9 months	10	51.08%
9-12 months	1	52.17%

DISCUSSION

This was a prospective study conducted in family planning unit of Hindu Rao Hospital and NDMC Medical College to see the acceptability and compliance MPA (Antara) injections. Total 180 women who opted for first dose of MPA were enrolled for the study and were followed up for compliance of further

doses and any side effects noted. In our study 87.7% of women were in the age group 20-30 years which is the most reproductive period and they are in need of maximum contraception (table 1). 4.7% women were above 35 years which shows that maximum number of patients by this time have already completed their family and are in need of permanent method. The mean age of women was 26.5 years in a study by Nautyal *et al.,* (2016) and 27 years by Rai *et al.,* (2007) and Khan *et al.,* (2015) which is consistent with our study**.**

33.3 % women were para one in our study while in a study by Rai *et al.,* (2007) 21% primipara chose DMPA compared to multipara and similar results were also observed by Khan *et al.,* (2015). Less number of women using spacing methods suggests low awareness and information about these methods among Indian women.

10% women had no formal education while 80% studied up to high or secondary school in our study (table 1). These findings are similar to NFHS-3 study, which suggest spacing methods like Antaraare more popular among women with at least middle school education than uneducated women [NFHS - 3(2007)]. Study by Aggarwal *et al.,* (2005) also suggests that use of spacing method of contraception was more popular among more educated women.

Before accepting MPA 75.5% women (table 2) were not using any formal contraceptive while 11.1% were using IUCD and they wanted to switch on to another contraceptive because of excessive menstrual bleeding associated with it. MPA could be a benefit to such women as it causes amenorrhea or oligomenorrhoea.24.5% women in our study were using some prescribed method of contraception which is comparable to a study by Nautiyal *et al.,* (2016) where one third of the study population was using any prescribed method of birth spacing.

17.2% patients (table 3) accepted MPA after MTP as a preferred choice of contraception and these were the women who mainly continued with further doses of MPA after counseling as they had already suffered with unwanted pregnancy. In our study 2.2% accepted Antara 6 weeks postpartum and 14.44 % who accepted Antara, had their last child birth less than 1 year and were lactating. Progestogen only contraceptive showed no impairment of lactation which is seen in study by Singhal et al who found nearly hundred percent satisfactions in amount of lactation in primipara using DMPA.DMPA can be safely offered to postpartum and lactating women who don't want to use IUCD as a spacing method (Singhal *et al.,* 2014). 71 (39.44%) women who accepted MPA had their last birth 1-3 years. Thus MPA can be good option for these women for spacing their childbirth.

Out of 180 patients, 51.11% came for the second dose of Antara while 48.88%, 71.1% and 85% were drop outs after 3 months 6 months and 9 months respectively in our study (table 4). Foensca *et al.,* (2017) found discontinuation rate of 73% after first injection and Nautiyal *et al.,* (2016) found 32.5 % while in various studies it ranged from 42 % to as high as 71 % ((Nautiyal *et al.,* (2016) , Danli (2000), Atkun *et al.,* (2005)). Discontinuation of a method occurs when there is method failure (pregnancy), when a woman no longer has a need for contraception (because of a desire to become pregnant, infrequent sex (husband away, marital dissolution or menopause), or when a woman is dissatisfied with her method or cannot access or afford it. Though discontinuation rate was high in our study after 3rddose, patient using it for spacing method could be benefitted even if using two doses for delaying their pregnancy in view of delayed return of fertility after stoppage of MPA.

Though all the patients who discontinued could not be contacted but maximum patients discontinued because of amenorrhea while some of the patients wanted to adopt another method/ permanent method and had used Antara as interim method. Many women found it useful for short term contraception (3-6 months) prior to opting for sterilization. Others who discontinued were those who wished to conceive or unable to come as this was timely scheduled dosing and patients not reporting in time with a time lag of more than 4 weeks after scheduled 3 monthly dose were also counted as dose discontinued (Rai et al 2007, Atkun et al 2005) Discontinuation or drop out can be reduced by pretreatment counseling on expected side effects at the start of MPA injection.

Out of 92 women who reported for further doses, 63(68.47%) patients had menstrual disturbances followed by amenorrhea in 48 (52.17%) patients in our study. Menorrhagia was seen in only one patient in our study which got settled after next dose of injections. Irregular bleeding and disruption of menstrual cycle has also been observed by Aktun *et al.*, (2005) and Rai *et al.*, (2007) in 65% -80% of women. In a study by Anju *et al.*, (2017) amenorrhea (68.18%) was the main side effect followed by spotting per vaginum (18.18%). In our study 23.91% at 3 months, 40.21% at 6 months and 51.5% were amenorrhic at 9 months which is similar to the study by Polaneczky *et al.*, (1996) where the percentage of women with amenorrhea was 34% at 3 months, 43% at 6 months, 66% at 9 months, and 60% at 12 months. Patients were worried about not having menses for long time but after counseling most of the patients were ready to continue with MPA. Also amenorrhea is beneficial in women with anemia and menorrhagia. All progestogen-only methods, whether low or high dose, lead to menstrual disturbances. Although troublesome, the menstrual disturbances which occur in DMPA users very rarely require operative or medical intervention, and can often be improved simply by short courses of estrogen or shorter injection interval.

Headache as a complaint was seen in 2 patients while no significant weight gain was seen in our study. There was no difference in weight gain in a study conducted in Thailand comparing DMPA with IUD users by Taneepanichskul *et al.*, (1998).There has been no significant effect on blood pressure of the women in our study similar to study done by Rai *et al.*, (2007).

DMPA has very low failure rates (0.3-0.7 /100 women years) comparable to that of implants and female sterilization (Kaunitz *et al.*, (1997). Contraceptive failure rate was zero, thus indicating its high efficacy (100%) and leading ultimately to a high patient satisfaction. Thus MPA is highly effective reversible contraceptive method.

Limitation of our study is that no effect on BMD and long term effect on return to fertility and menstruation was taken in to consideration as our was a limited time period study of only 15 months

CONCLUSION

It is an effective and reversible contraceptive method and is easily available to women who desire Family Planning. Pre-administration counseling is essential tool to minimize attrition because of the menstrual changes which occur in most of the patients. This can be reduced with effective counseling at the start of MPA injection which should cover the contraceptive and non-contraceptive benefits of DMPA; specific side effects such as bleeding changes, weight changes, and fertility changes. DMPA should be considered a highly effective, safe, convenient contraceptive option for appropriately selected patients. If women are given reminders for their follow-up injections, it could increase regular and uninterrupted use of the injection.

ACKNOWLEDGMENT

There was not conflict of interest for this article. No funding required for this article

REFERENCES

12.**Khan ME, Dixit A, Ahmad J (2015).** Introduction of DMPAin public health facilities of Uttar Pradesh andRajasthan. An evaluation. Project brief, New Delhi, India. *Population council.*

Aggarwal H, Vaid S, Vaid N (2005). Comparison of the level of awareness of family planning measures in the urban and urban-slum women. *Anthropologist* 7(1) 35–40.

Aktun H, Moroy P, Cakmak P, Yalcin HR, Leyla M (2005). Use of a Long-acting Progestin Injectable Contraceptive in Turkish Women, *Contraception* **72**(1) 24-27.

Anju G, Som N, Pankaj K, Manjusha N (2017). Study of prevalence of different contraceptive methods feasibility of DMPA among married women in urban area. *Indian journal of Forensic and Community Medicine* **4**(2) 90-94**.**

Chigbu B, Onwere S, Aluka C, Kamanu C, Okoro O, Feyi-Waboso P *et al.*, (2010).Contraceptive choices of women in rural Southeastern Nigeria. *Nigerian Journal ClinicalPractice;* **13** 195-9.
Danli S, Qingxiang S, Guowei S (2000). A multicenter clinical trial of the long-acting injectable contraceptive Depot Provera in Chinese women. *Contraception* **62**(1)15-18.
Family Health International (FHI) (2010). Types, availability, and use of injectable. FHI. *India Brief 3*. New Delhi.
Finer LB, Zolna MR (2011). Unintended pregnancy in the United States: Incidence and disparities. *Contraception* **84** 478-85.
Fonseca M, Prasad Y D, DeepaliK (2017) Acceptance and compliance in a tertiary care Hospital in Mumbai, India *International Journal of Reproduction Contraception Obstetrics and Gynecology* **6**(9) 3879-3881.
Government of India (No Date). India's 'VISION FP 2020'Family Planning Division, *Ministry of Health & Family Welfare,* New Delhi.
International Institute of Population Sciences (IIPS) **(No Date).** District level household and facility survey *(DLHS-3)* 2007–08. Mumbai, India.
Kaunitz AM (2001) Injectable long-acting contraceptives. *Clinical Obstetrics and Gynecology;* **44** 73-80.
Kaunitz AM and Jordon WC (1997) Two Long-acting Hormonal Contraceptive. *Contemporary Obstetrics/Gynaecolgy* **42**(2) 27-53.
Mitchell HS, Stephens E (2004). Contraception choice for HIV positive women. *Sexually Transmitted Infections,* **80** 167-73.
Nautiyal R, Bijalwan R, Maithili B, Latika N *et al.*, (2016) Feasibility of injectable depotmedroxyProvera in semi urban camp setting. *International journal of Reproduction and contraception, Obstetrics and Gynaecology* **5**(40) 1056-1060.
NFHS-3 International Institute for Population Sciences (IIPS) and Macro International. (2007). *National Family Health Survey (NFHS-3),* 2005–06: India*:* **1** Mumbai: IIPS.
Polaneczky M, Guarnaccia M, Alon J, Wiley J F(1996). Early experience with the contraceptive use of depot medroxyprogesterone acetate in an inner.-city clinic population. *Family planning perspective* July – Aug.
Rai L, Prabakar P Nair S (2007) Injectable depot medroxyprogesterone - A safe and an effective contraception for an Indian setting. *Health and Population- Perspectives and Issue*s **30**(1)12-23.
Singhal S, Sarda N, Gupta S (2014). Impact of injectable Progestogen Contraception in early puerperium on Lactation and Infant health. *Journal Clinical and Diagnostic Research* **8**(3) 69-72.
Taneepanichskul S, Reinprayoon D, Khaosaad P (1998) Comparative Study of Weight Change between Long-term DMPA and IUD Acceptors, *Contraception* **58** 149-151.
Warwick DP (1988). Culture and the management of family planning programs. *Stud Family Planning;* **19**:1–18.