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Acceptability and Compliance of Injectable Contraceptive DMPA [Depot Medroxy Progesterone Acetate] - A Prospective Observational Study in a Tertiary Care Hospital

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Abstract: ***Background: India's population by 2050 is projected to reach 1.53 billion, making it the most populated country in theworld. As there is no ideal contraceptive which can appeal to all ages, health care providers should offer various options to the client who has a right to exercise her choice. The contraceptive prevalence of injectable contraception is 3.5% worldwide, whereas nationally the current use of DMPA is only 0.1%. The aim is to study the acceptability and compliance in women who seeks temporary contraception as DMPA. Methods: All 120 motivated and eligible women who chooses DMPA as a temporary contraceptive who fulfilled the inclusion and exclusion criteria were included in this study conducted in the Department of Obstetrics and Gynecology, at Government Raja MirasudharHospital, Thanjavur medical college over a period of 15 months. Women opting for DMPA injectable contraceptive during first nine months of the study period will be recruited in the study. Results: In this study, majority are in age group 26-30 years. Majority of the acceptors (40%) were Primiparous women, educated, belongs to postabortal period (65%). No previous contraception was used by many of the DMPA acceptors (64.2 % women). Irregular bleeding (36.7%) is the most common side effect. Most of the DMPA accepters discontinued after 1st injection (72.5%). The major reason for discontinuation was due to side effects (36.7%). Conclusion: Awareness of the patients about the benefits of DMPA over other contraceptives is must. Women needs to be educated so that they can avail access to wide range of contraceptives. 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.***

Keywords: DMPA, ideal contraceptive, client,injectable, prevalence, acceptability, compliance,temporary contraceptive side effects, discontinuation

1. Introduction

India's longstanding Family Planning program, which was started in 1952 is now mainly based on a "Cafeteria approach"; whereby a number of different methods of contraception are offered to the eligible couples. Before, India had only four options in the basket of contraceptive methods: condom, sterilization, pills and intrauterine device. 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. In 2017 Government of India expanded this basket by adding newer contraceptives like CHAAYA (Centchroman tablet) and DMPA injection (ANTARA). DMPA is a reversible injectable contraceptive which has been in use as a spacing method since 1994 in the private sector of India is now being launched under the union ministry of Health & Family welfare Initiative [1] in public sector in the name of Antara programme.

DMPA 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 alleviates the need of daily consumption (e. g. combinational pills) and does not depend upon sexual intercourse (barrier methods) and it eliminates the need for partner cooperation. It requires less patient compliance with an easy 3 monthly administration schedule with window period of 2 weeks earlier and 4 weeks later from the scheduled date and is as effective as sterilization. In addition, there are many non-contraceptive benefits.

2. Materials and Methods

Study Design:

Prospective observational study

Study Setting:

The study conducted in the Department of Obstetrics and Gynecology, in a tertiary care hospital.

Study Subjects:

All motivated and eligible women who seek temporary contraception.

Sample Size:

All motivated and eligible women who seek temporary contraception, during the period from January 2020 to March 2021

Inclusion Criteria:

All motivated women who choose DMPA as a temporary contraceptive will be included in this study.

Exclusion Criteria:

- Nursing mothers up to 6 weeks
- Severe Hypertension
- Uncontrolled Diabetes
- Severe renal impairment
- Hemoglobinopathies / vascular disease
- Vaginal bleeding of unknown etiology.
- Patients with known hypersensitivity to fenofibrate
- Acute DVT/Pulmonary embolism/current or history of ischemic heart disease or stroke
- Severe liver disease and most liver tumors
- Current breast cancer

3. Study Procedure

The study was a prospective observational study to assess the acceptability and compliance of injectable contraceptive DMPA. A prospective study was conducted in women who are attending the family planning unit for contraception whether post-partum, post-abortal or seeking contraception in the interval period in the department of Obstetrics and Gynaecology, Raja Mirasudhar hospital, Thanjavur for a period of 15 months from January 2020 to march 2021 were counseled for long acting contraceptive method like DMPA and about their possible side effects. Women are 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.

A total of 120 women opted for DMPA injectable contraceptive during first nine months of the study period. A detailed history, physical and gynecological examination was done. Body weight and blood pressure was measured at baseline and every 3 months thereafter. Pre-administration counseling at the start of injection which should cover the contraceptive and non-contraceptive benefits, specific side effects such as bleeding changes, weight changes, and fertility changes.

The schedule consists of injection within day 5 for menstruating women within day 7 for post-abortal women and 6 weeks postpartum for recently delivered women.

Women who give informed consent are given injection Medroxy Progesterone Acetate (MPA) 150 mg deep intramuscular in the upper lateral gluteal region using 23-24 gauge needle free of cost.

Details of the patients filled in the MPA Card provided by Government of India which includes the Patient's socio demographic details, obstetric and menstrual history, weight, blood pressure and questions related to their contraceptives status and compliance are noted. Subsequent injections are given at three monthly intervals. Women who did not report for the next doses were asked telephonically to return for further dose, if she is not compliant then reasons are noted in her MPA card. Socio demographic variables, acceptance, compliance and various adverse effects such as weight changes, menstrual problem (increase or decrease bleeding), amenorrhea, headache, bone pains as well as other questions, like their reasons for using/not using the methods are analyzed.

4. Results and Analysis

Total 120 women were given first dose of DMPA during first nine months of study period and they were followed up. The collected data is represented as graphs and charts and was evaluated and was evaluated statistically.

Table 1: Age wise Distribution

Age (In years)	Cases	
	No	%
Up to 20 years	7	5.8
21-25 years	38	31.7
26-30 years	53	44.2
31-35 years	16	13.3
>36	6	5
Total	120	100

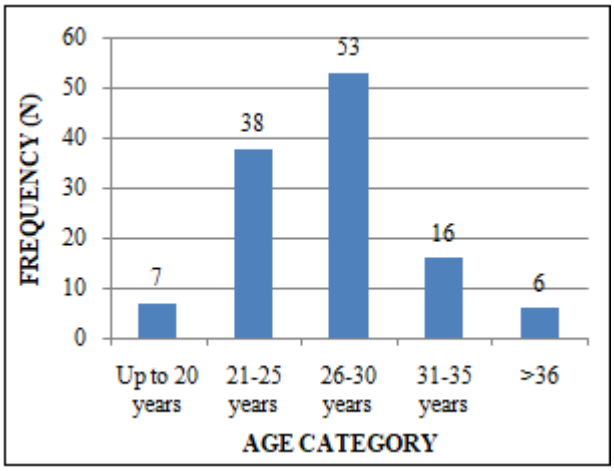

Figure 1: Bar diagram showing Age distribution

According to figures in table 1, 53 women (44.2%) recruited in this study were from the age group of 26 to 30 years and only 6 women (5%) were from the age group of > 36 years. These are the age group (26 to 30 years) of women who attend the family planning department in many numbers.

Table 2: Parity wise distribution

Parity	Cases	
	No	%
0	2	0.8
1	47	40
2	38	31.7
3	30	25
4	3	2.5
Total	120	100.0

According to figures in Table 2, 47 women (40%) who have used this contraception belongs to parity 1, 38 (31.7%) belongs to parity two, 30 (25%) belongs to parity three, and 3 (2.5%) were grand multipara. Even 2 (0.8%) nulliparous women used this as a contraceptive method as a method of birth spacing was found in this study.

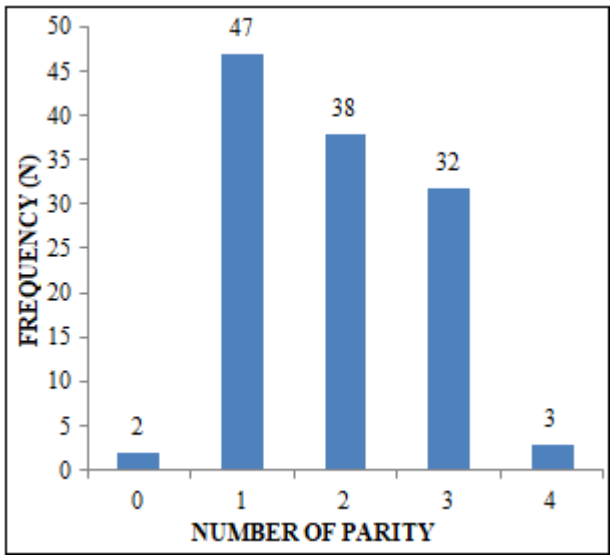

Figure 2: Bar diagram showing Parity distribution

Table 3: Educational status

	Cases	
	No	%
Illiterate	3	2.5
Primary	13	10.8
High school	30	25
Secondary	40	33.3
Graduate	34	28.3
Total	120	100.0

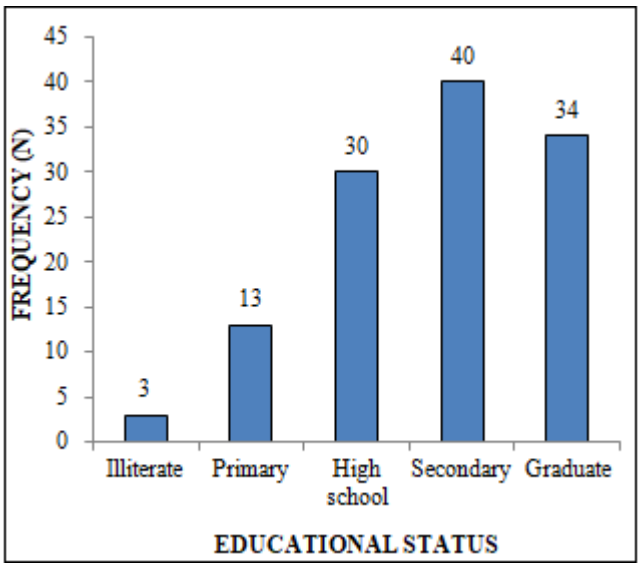

Figure 3: Bar diagram showing distribution of Educational status

Figure 3 shows majority of the acceptors belongs to high school 30 (25%), secondary education 40 (33.3%) and graduates 34 (28.3%).

Table 4: Time of SOI

	Cases	
	No	%
POSTPARTUM	14	11.7
POSTABORTAL	78	65
INTERVAL PERIOD	28	23.3
Total	120	100.0

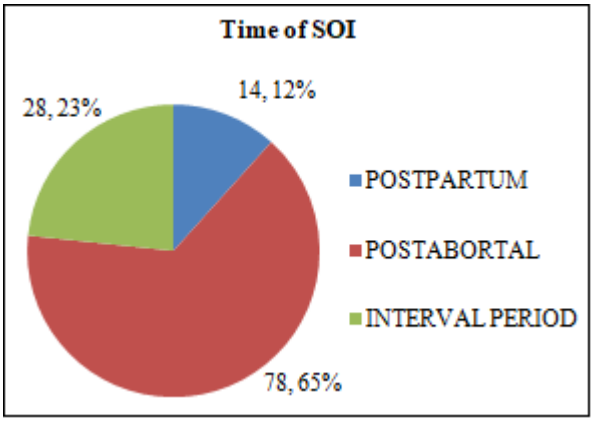

Figure 4: Pie Chart showing distribution of Timing of SOI

Table 3shows 78 (65%) had used DMPA in the post abortal period, 28 (23.3%) used in the interval period and 14 (11.7%) women had started in the postpartum period.

Out of 14 women who used DMPA in the postpartum period (after 6 weeks postpartum), 10 were Primiparous, all 14 women continued breast feeding, and it does not show any affect on the quantity and quality of breast milk. None of the women stopped lactation owing to DMPA.

Table 5: Previous contraception used among the study subjects

Previous Contraception used	Cases	
	No	%
IUCD	21	17.5
ORAL PILLS	10	8.3
CONDOM	12	10
NONE	77	64.2
Total	120	100

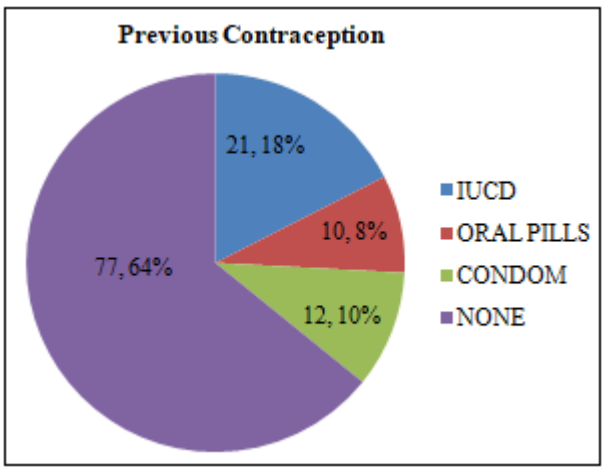

Figure 5: Pie Chart showing distribution of Previous Contraception

According to figures in Table 5, 77 (64.2%) women did not use any previous contraception before DMPA.21 (17.5%) used IUCD, 12 (10%) used condom before and 10 (8.3%) women used oral pills as a previous contraceptive prior to DMPA.

Table 6: Side effects among study subjects

Side Effects	Cases	
	No	%
Irregular Bleeding	74	61.7
Amenorrhea	17	14.2
Scanty Menses	10	8.3
Headache	3	2.5
Backache	4	3.3
Weight Gain	4	3.3
Hypertension	1	0.8
Menorrhagia	3	2.5
Mood Changes	1	0.8
Bone pain	1	0.8
No Side Effects	2	1.7
Total	120	100

Most common side effect was irregular bleeding 74 women (61.7%) followed by Amenorrhea in 17 (14.2%) women and scanty mensus in 10 (8.3%) women. Few had other side effects like headache (2.5%), backache (3.3%), menorrhagia (2.5%), weight gain (3.3%), etc.2 (1.7%) women had no side effectsin using DMPA. No pregnancy, serious medical events were reported.

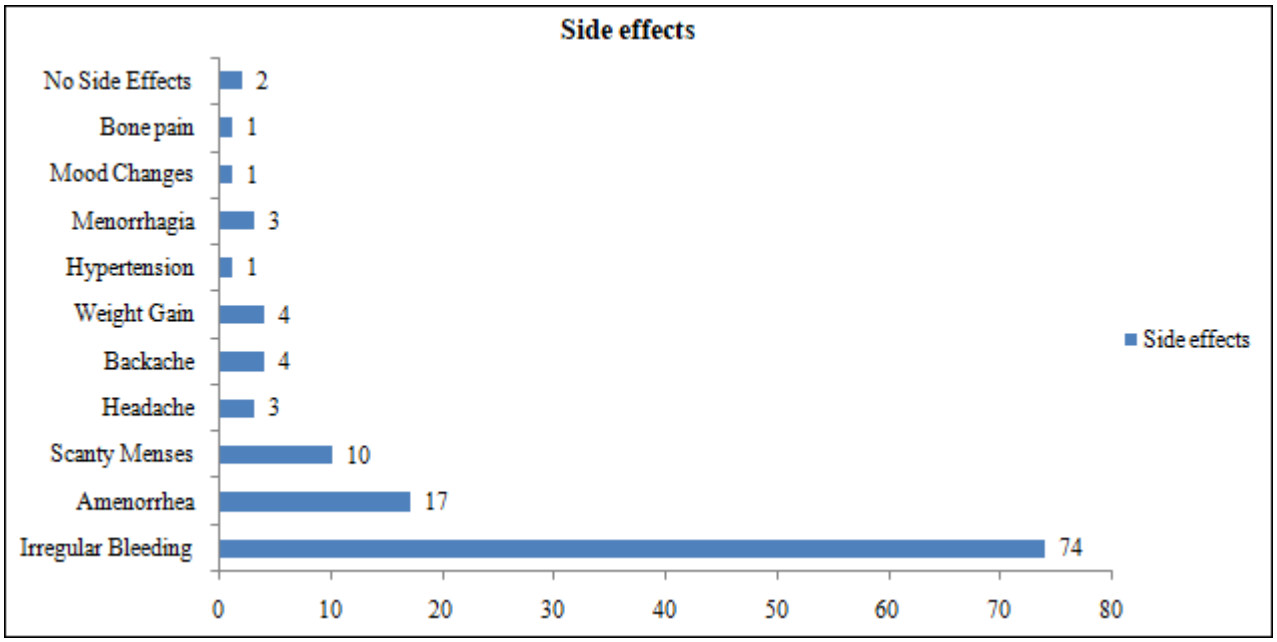

Figure 6: Bar diagram showing distribution of Side effects

Table 7: Discontinuation time among study subjects

Discontinuation time	Cases	
	No	%
After 1st injection	87	72.5
After 2nd injection	21	17.5
After 3rd injection	9	7.5
After 4th injection	3	2.5
Total	120	100

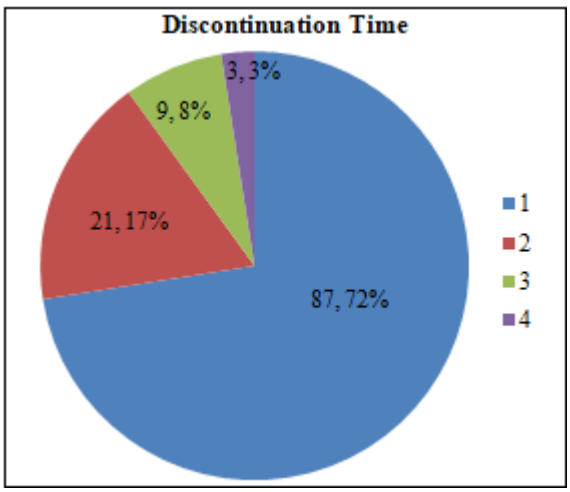

Figure 7: Pie Chart showing distribution of Discontinuation Time

According to the figures in Table 7, 87 (72.5%) women did not take the injection after the first dose. In the remaining, 21 (17.5%) women did not continue after the second injection.9 (7.5%) women had left after third dose. Only 3 (2.5%) women had completed all the 4 doses. In this study, the maximum drop-out rate was after the 1st and 2nd injection.

Table 8: Reason for attrition

	Cases	
	Number (N)	Percentage (%)
SIDE EFFECTS	44	36.7
PLANNED PREGNANCY	12	10
CHANGED CONTRACEPTION	17	14.2
PERMANENT METHOD	12	10
LOST TO FOLLOW UP	29	24.2
SPOUSE INSISTANCE	2	1.7
HUSBAND AWAY	4	3.3
Total	120	100

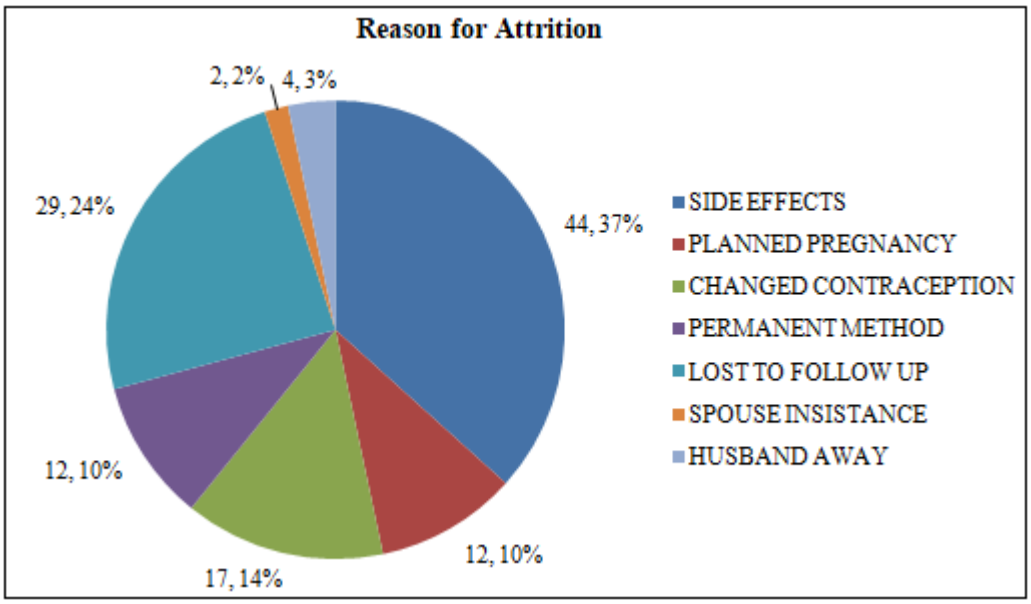

Figure 8: Pie Chart showing distribution of Reasons for Attrition

Table 8 shows the most common reason for discontinuation in 44 (36.7%) women was the side effects.29 women (24.2%) had last to follow up, 17 (14.2%) women had changed contraception, and 12 (10%) women had planned pregnancy and 12 (10%) women moved to permanent method of contraception.

5. Discussion

Majority 44.2% of women were in the age group 26-30 years.5% women were above 36 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., and 27 years by Rai et al., and Khan et al., which is consistent with our study.

40% women were para one in our study, 2.5% were grand multipara while in a study by Rai et al., 21% primipara chose DMPA compared to multipara and similar results were also observed by Khan et al. From Rekha Jain et al study, 33.3% were primiparous women, 58.88% women were para two.

2.5% women had no formal education while 25% and 33.3% studied up to high or secondary school in our study respectively. According to Rekha jain et al., 62.2% studied up to high school, and 17.7% studied up to senior secondary, 10% had no formal education.

65% patients accepted DMPA after MTP (post abortal) as a preferred choice of contraception, 11.7% accepted Antara 6 weeks postpartum and 23.3% who accepted Antara in the interval period. According to Rekha jain et al., 17.2% women (table 4) preferred DMPA post abortally, 2.22% accepted Antara 6 weeks postpartum and 14.44 % who accepted Antara, had their last child birth less than 1 year and were lactating.

In our study, 14 (11.7%) women, used DMPA in the postpartum period, Progestogen only contraceptive showed no impairment of lactation, which is similar to Singhal et al study, who found nearly hundred percent satisfactions in amount of lactation in primipara using DMPA. Thus DMPA can be good option for these women for spacing their childbirth and post abortally.

Before accepting DMPA 64.2% women (table 5) were not using any formal contraceptive while 21% were using IUCD and they wanted to switch on to another contraceptive

because of excessive menstrual bleeding associated with it. DMPA could be a benefit to such women as it causes amenorrhea or oligomenorrhoea. According to Rekha jain et al, 75.5% were not used any formal contraceptive, 11.1% were used IUCD, 24.5% women were using some prescribed method of contraception which is comparable to a study by Nautiyal et al.,

Out of 120 patients, 72.5% discontinued after 1st injection, 27.5% came for the second dose of Antara while 17.5%, 7.5% and 2.5% were discontinued after 3 months 6 months and 9 months respectively in our study (table 7). According to Rekha jain et al, 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. Similar drop out is seen in study of Fonsea et al andAktun H et al. In our study only 3 (2.5%) women has completed 12 month follow up which is lower than study of Sirisha P et al in which 36%women completed 12 month follow up. Higher discontinuation rate may be due to various factors like side effects, socio cultural factors, and family myth like irreversibility of injection or women coming from remote areas and were unable to come again for follow up. Though discontinuation rate was high in our study after 2nddose, 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 DMPA.

Maximum patients discontinued (44%) because of side effects such as irregular bleeding (61.7%) and amenorrhea (14.2%) while some of the patients wanted to adopt another method/ permanent method (10%) and had used Antara as interim method. According to Fonsea et al study, 38% women discontinued because of side effects, 28% were lost to follow up, 6.5% were discontinued due to planned pregnancy, 17% women moved to other types of contraception.

In our study, 74 (61.7%) patients had irregular bleeding which is found similar (63%) in fonsea et al study followed by amenorrhea in 17 (14.2%) patients. Only one woman developed hypertension (both are more than 40 years so it may be due to the age factor). Irregular bleeding and disruption of menstrual cycle has also been observed by Rai et al., in 65%-80% of women. According to Rekha jain et al study, Out of 92 women who reported for further doses, 63 (68.47%) patients had menstrual disturbances followed by amenorrhea in 48 (52.17%).

Contraceptive failure rate was zero, thus indicating its high efficacy (100%) and leading ultimately to a high patient satisfaction. Thus DMPA is highly effective reversible contraceptive method.

6. Conclusion

DMPA is an effective and reversible method of contraception and is easily available to those who desire Family Planning. Pre-administration counseling is an important tool to minimize discontinuation because of the menstrual changes which occur in most of the patients. This can be decreased by effective counseling at the start of DMPA injection which should include the contraceptive and non-contraceptive benefits of DMPA; specific side effects such as bleeding disturbances, weight changes, and fertility changes. Apart from menstrual troubles there are no major side effects related to its use. Injectable DMPA use as a contraceptive in the postpartum period was found to be a safe and effective alternative method with no deleterious effect on mother's milk secretion and infant growth. In a developing country like India where infant and perinatal mortality is high it is better to use temporary methods rather than permanent methods, until the baby becomes older as well as good for spacing also. In such cases DMPA appears to be the best option. Women need to be educated and empowered so that they can control their fertility rates and avail access to wide range of contraceptives which suites their age and reproductive life. Contraception is always associated with apprehension and misinformation but with proper selection of cases with good counseling and diligent follow up compliance can be improved. The study concludes that DMPA is a very effective contraceptive. However side effect decreases compliance. DMPA when given every 3 months is a highly effective hormonal contraceptive with a very low failure rate. It should be available as a first line contraceptive to all those who wish to opt for reversible methods of contraception.

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