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Original Research Article

Study of depot medroxyprogesterone acetate as an extended postpartum contraceptive at SCB medical college and hospital, Cuttack

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ABSTRACT

Background: Increase in contraceptive use during the postpartum period substantially reduces the rate of maternal and infant mortality by preventing unplanned and unwanted pregnancies. Injectable Medroxy Progesterone acetate (DMPA) is one long acting reversible safe and effective method for postpartm contraception. Aims and Objectives to study the acceptance, efficacy, side effects and compliance of DMPA as an extended postpartum contraceptive at SCB Medical College, Cuttack.

Methods: The study includes 76 women between 6weeks to 1year postpartum who had chosen DMPA as contraceptive after counseling regarding the basket of choices. DMPA injection was given within 7 days of menstruation if it has returned or at any time after being confirmed that woman is not pregnant with a back up for first 7days. Subsequent injections were given at three monthly intervals and followed up for one year after the first injection for pregnancy rate, side-effects, discontinuation and patient satisfaction.

Results: Maximum females were from the combined age groups 25-29 (39.47%) and 20-24 years (35.52%). 46.1% women belong to lower middle socioeconomic group. The most common menstrual problem was amenorrhea in 47.36% followed by scanty bleeding in 22.36%. 25% discontinued after 1st dose of injection, which is the maximum. The commonest reason for discontinuation observed was menstrual problems (37.93%) followed by use of other methods of contraception (17.24%). Out of 76, 23 women were not satisfied (30.26%), main reason of dissatisfaction being menstrual problems. Failure rate was nil.

Conclusions: The study concludes that DMPA is a very effective, safe, and long acting contraceptive with no effect on lactation. Proper counseling can improve the acceptance and compliance.

Keywords: Acceptability, Compliance, Contraception, DMPA, Side effects

INTRODUCTION

Population explosion today is a major concern and an impending disaster. India is the second most populated country in the world with nearly a fifth of the world's population of around 138 crores. The major cause of population growth is high birth rate due to poverty, illiteracy, cultural norms, early marriage, sexual activity and behavior. The important determinants being higher proportion of women in reproductive age group (50%) and higher fertility due to unmet need for contraception.

According to the WHO, approximately 830 women die every day from preventable causes related to pregnancy and childbirth. The SDG target 3.1 is to reduce global maternal mortality ratio to less than 70 per 100,000 live births by 2030.[1] UNFPA study has estimated that if current unmet need for contraception could be fulfilled within next 5years, country can avert 35000 maternal deaths and 12lakh infant deaths.[2] More than 30% of maternal deaths and 10% of child mortality can be staved off if couples space their pregnancies more than 2 years apart by Cleland et al.[3] The contraceptive prevalence rate

(CPR) is 54 percent of currently married women age 15-49.[4] NFHS-4 states that almost 13% of women have an unmet need for family planning including a 6% unmet need for spacing and 7% for limiting in India.

Postpartum family planning (PPFP) is defined as the prevention of unintended pregnancy and closely spaced pregnancies through the first 12 months following childbirth. It can be post placental (with in 10min after placental delivery), immediate postpartum (with in 48hours), early postpartum (48hours-6weeks), extended postpartum (6weeks-1year).

MPA (Medroxy Progesterone Acetate) is a synthetic progesterone, an injectable contraceptive method.[5] Under the National family planning programme it has been added to the basket of choice (Antara Program). It inhibits secretion of pituitary gonadotropins, preventing follicular maturation and ovulation by suppressing the mid cycle LH peak.[6,7] Single dose of 150mg IM will suppress ovulation in most women for more than 14weeks. It also causes cervical mucus thick and viscid preventing sperm penetration[8] and endometrium atrophic making it unfavorable for blastocyst implantation.

Dose

150 mg intramuscular every 3 months or 300 mg every 6 months.

It is a highly effective contraceptive with perfect use failure rate 0.3% with good safety profile. Long acting acts for 3months with a grace period of 4weeks, completely reversible within 7-10 months from the date of last injection. [9,10]

It doesn't interfere with lactation and is suitable as a postpartum contraceptive. Doesn't require daily routine or additional supplements. Doesn't interfere with sexual intercourse and pleasure. No Estrogen related side effects. No increased risk of deep vein thrombosis, pulmonary embolism, stroke, or myocardial infarction. Long-term DMPA use decreases the incidence of pelvic inflammatory disease, and lowers the risk of endometrial cancer.

The administration of Depo-Provera usually causes disruption of the normal menstrual cycle.[11] Bleeding patterns include amenorrhea (present in up to 30% of women during the first 3 months and increasing to 55% by month 12 and 68% by month 24 & 80% by 3years) ,irregular bleeding and spotting, prolonged (>10 days) episodes of bleeding, rarely heavy prolonged bleeding may occur. Other adverse effects include loss of bone mineral density with long term use.[12] It is reversible and most bone lost is restored within 5years of stoppage, weight gain, headache, women with insulin resistance may develop diabetes.

Aim of study was to the acceptance, efficacy, side effects and compliance of DMPA as an extended postpartum contraceptive.

Objectives of the study was to know the contraceptive method used by the women of urban and rural population. To determine the factors associated with their acceptability according to their socio-demographic and obstetric characteristics. To determine the failure rate. To evaluate the maternal complications during postpartum period after use of this method. Rate of continuation and causes of discontinuation. To assess the degree of client satisfaction with this method.

METHODS

Inclusion criteria

Women of any age and parity seeking contraception between 6weeks to 1year post delivery.

Exclusion criteria

Those who didn't give consent for enrollment and regular follow up. Multiple risk factors for cardiovascular diseases (diabetes, hypertension, dyslipidemia). Severe hypertension (BP >= 160/100mmHg). Current or history of ischemic heart disease and stroke. Acute deep vein thrombosis or pulmonary embolism. Diabetes mellitus with nephropathy/ neuropathy/ retinopathy or diabetes >20 years. Unexplained vaginal bleeding. Severe decompensated cirrhosis and hepatic tumors. Migraine with aura. Current or past breast cancer.

Method of data collection

The study was conducted at Dept of O & G, SCB Medical College and Hospital, Cuttack from 01.06.2018 to 30.11.2019. Eligible women were counseled and were given choices explaining well about the benefits and side effects of each contraceptive. Those who opted for DMPA were included in the study. Their socio demographic data, detailed history and physical examination were recorded in the predesigned questionnaire or performa. Inj DMPA 150mg deep IM was given and next doses subsequently at 3 monthly intervals. The first dose is given after 6weeks postpartum.

If she is fully or nearly fully breastfeeding and her monthly bleeding has not returned; can be started any time between 6 weeks and 6 months no need for a backup method. If she is partially breastfeeding or not breast feeding and her monthly bleeding has not returned after being certain that the woman is not pregnant and she will need a backup method (e.g. Condom) for the first 7 days after DMPA injection. If her monthly bleeding has returned, can be started any day within 7 days of menstrual cycle with no need for a backup method. It can also be started any time later in the menstrual cycle (after 7 days) after being certain that the woman is not pregnant

with a backup method for the first 7 days after the injection.

For more than 6months postpartum, can be started at any time, if her monthly bleeding has not returned after being certain that the woman is not pregnant with a backup method (e.g. Condom) for the first 7 days. If her monthly bleeding has returned, she can start injectable as advised above.

They were followed at 3monthly intervals from the date of first injection for pregnancy, alteration in menstrual pattern, other side effects, patient satisfaction and reason if patient wants discontinuation.

Type of study

Observational Analytical Retrospective study.

Statistical tool used to analyse data: MS Excel (Office 365).

RESULTS

Table 1: Profile of study participants (n=76).

Characteristic		Mean ± Std.Dev.* (min - max)/ Number (%)
Age (in years)		26.1 ± 4.5 (19-40)
Religion	Non-Hindu	19 (25.0)
Employment status	Employed	13 (17.1)
Place of residence	Rural	14 (18.4)
Socio-economic status	Upper Lower class	30 (39.5)
	Lower Middle class	35 (46.1)
	Upper Middle class	11 (14.5)
Parity	One Two Three	36 (47.36) 35 (46.05) 5 (6.57)
Mode of last delivery	Cesarean section VD	35 (46.1) 41 (53.94)
Breastfeeding	Currently feeding	71 (93.4)
Contraceptives last used	Barrier method	12 (15.8)
	Copper T	08 (10.5)
	Oral contraceptive pills	05 (06.6)
	Natural method	04 (05.3)
	None	47 (61.8)

Std. Dev.: standard deviation; min: minimum; max: maximum

Age is an important determinant for the use of contraception. Maximum females were from the combined age groups 25-29 (39.47%) and 20-24 years (35.52%). Mean age was found to be 26.1±4.5. 57 were Hindu (75%) and 19 were Muslims (25%). 81.57% users dwelled in urban areas and 18.42% in rural areas. 63 women were housewives (82.89%) and 13 were employed (17.10%). 46.1% women belong to lower middle socioeconomic group and 39.5% women belong to upper lower group. 63.15% of users were educated from primary up to matriculation. Only 2 users were illiterate. 36 women opted for DMPA after 1st child (47.36%). 35 women opted after second child (46.05%). 41 women took DMPA after vaginal delivery and 35 women after LSCS. 61.84% women have not used any kind of contraception. Barrier method was used by 12 couples, IUCD by 8 women, OCPs by 5 women and 4 couples were practicing natural method of contraception.

Table 2: Comparison of complications in all follow up.

Complication	1st follow up %	2nd follow up %	3rd follow up %
Irregular bleeding	13.15	6.66	3.33
Delayed periods	9.21	13.33	16.66
Heavy/ prolonged bleeding	3.94	8.88	10
Scanty bleeding	22.36	26.66	26.66
Amenorrhea	47.36	66.66	83.33
Weight gain	00	6.66	10

1st follow up was done 3months after the date of first injection. Out of 76, menstrual problems were seen in 64 women. 10 reported irregular bleeding, 7 delayed periods, 3 heavy/prolonged bleeding, 17 scanty bleeding and 36 reported amenorrhea 1-3 months following the first injection. So the most common menstrual problem was amenorrhea in 47.36% followed by scanty bleeding in 22.36%. 12 women reported no complications (15.78%). Headache was complained by a single woman, none complained of weight gain. Reduced milk secretion was seen in one woman.

2nd follow up was done 6 months after the date of first injection. 45 women were enrolled. 66.66% reported amenorrhea, 26.66% scanty bleeding and 13.33% delayed periods. Heavy bleeding was seen in 8.88% and irregular bleeding in 6.66%. No side effects seen in only one woman. (2.22%) Headache and reduced milk secretion was complained by the same one woman. Weight gain was reported by 3 females (6.66%). 18% discontinued after 2nd dose injection.

3rd follow up was done 9months after the date of first injection. 30 women were enrolled. Percentage of women

having amenorrhea was 83.33%. Scanty bleeding was seen in 26.66%, delayed periods in 16.66%, heavy bleeding in 10%, irregular bleeding in 3.33%. Headache and reduced milk secretion was seen in the same one woman. 3 women complained of weight gain. 7% discontinued after 3rd dose injection.

Affandi B et al in a study concluded that the main problem of long-acting progestogens is the disruption of the menstrual cycle.[13]

Chance of reporting a complication increased with each follow up visit. Women were also more likely to report an increasing number of co-existing complications as the number of follow up visits increased. Of the 30 participants in the 3rd follow up, all reported at least one complication.

The commonest reason for discontinuation observed was menstrual problems (37.93%) followed by use of other methods of contraception (17.24%).

Table 3: Correlation of no of complications with duration of follow up.

Number of complications reported	1st follow up visit		2nd follow up visit		3rd follow up visit	
	N	%	N	%	N	%
0	12	15.8	2	4.4	0	0.0
1	55	72.4	30	66.7	19	63.3
2	7	9.2	10	22.2	7	23.3
3	2	2.6	2	4.4	3	10.0
4	0	0.0	1	2.2	0	0.0
5	0	0.0	0	0.0	1	3.3
Total	76	100.0	45	100.0	30	100.0

Table 4: Reasons for discontinuation.

Reason	Number	Percentage
Menstrual problems	11	37.93
Fear of amenorrhea	3	10.34
Switched to other methods	5	17.24
Household problems	3	10.34
Transport problem	1	3.44
Religion issues	2	6.89
Not staying with husband	1	3.44
Not specified	1	3.44
Total	27	

Table 5: Discontinuation at each follow up.

Follow up	Total no. of female	Discontinued	Percentage
1st	76	17	22.36
2nd	45	08	17.78
3rd	30	02	6.67

5 females switched to other contraceptives, 2 opted for female sterilization, 2 for combined oral pills, one for Progestin only pills and one for IUCD.

Maximum discontinuation were after the 1st dose (22.36%), which decreased to 17.78% after 2nd dose and 6.67% after 3rd dose.

Out of 76 DMPA users 30.26% were not satisfied, main reason of dissatisfaction being menstrual problems.

From the above table it was observed that demographic profile doesn't affect satisfaction significantly.

The trend of amenorrhea shows increase in the percentage of amenorrhea from 1st to 3rd follow up. Total amenorrhea obtained after 3 injections was 83.33%. p value calculated for the trend was <0.001 suggesting chance of amenorrhea increases with no of months of exposure.

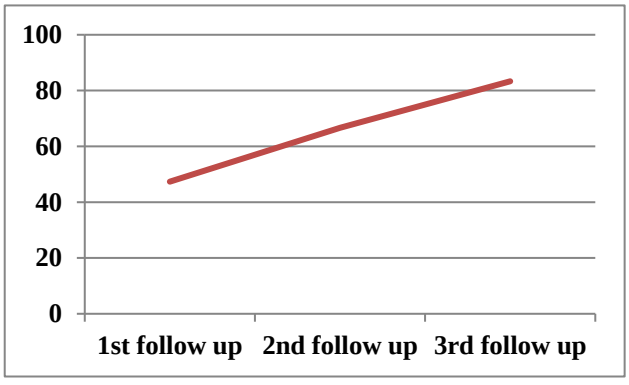

Figure 1: Graphical presentation of percentage of amenorhea in relation to no. of injections.

Effectiveness

Of all the women who were administered with inj DMPA, none of them got pregnant. Hence in our study failure rate was NIL.

Table 6: Satisfaction.

Satisfaction	Number	Percentage
Yes	53	69.73
No	23	30.26
Total	76	

Table 7: Correlation of satisfaction with patient profile.

			Satisfaction				
			No (n=23)		Yes (n=53)		P value
Variable		**N**	**N**	**%**	**N**	**%**	
Religion	Hindu	57	14	60.87	43	81.13	0.084
	Non-Hindu	19	9	39.13	10	18.87	
Occupation	Housewife	63	20	86.96	43	81.13	0.743
	Employed	13	3	13.04	10	18.87	
Residence	Urban	62	19	82.61	43	81.13	1.000
	Rural	14	4	17.39	10	18.87	
SES	UL	30	11	47.83	19	35.85	
	LM	35	9	39.13	26	49.06	
	UM	11	3	13.04	8	15.09	
Mode of delivery	Vaginal delivery	41	17	73.91	24	45.28	0.026
	Cesarean section	35	6	26.09	29	54.72	
Breast feeding	No	5	4	17.39	1	1.89	0.027
	Yes	71	19	82.61	52	98.11	
Past user type	B	12	3	13.04	9	16.98	
	CuT	8	2	8.70	6	11.32	
	NM	4	1	4.35	3	5.66	
	NO	47	15	65.22	32	60.38	
	OCP	5	2	8.70	3	5.66	
Variable	**No (n=23)**		**Yes (n=53)**		**P value**		
	Mean	**SD**	**Mean**	**SD**			
Age	26.57	4.841	25.91	4.439	0.564		
Parity	1.74	0.619	1.53	0.608	0.171		

Table 8: Trend of amenorrhea (amenorrhea in relation to no of injections).

Amenorrhea	Percentage
1st follow up (after 1st inj)	47.36
2nd follow up (after 2nd inj)	66.66
3rd follow up (after 3rd inj)	83.33

Chi2 for trend p value <0.001

DISCUSSION

In our study 30 women completed 9 month follow up which is higher than study of Sirisha P et al in which 36% women completed 12 month follow up.[13]

Affandi B. et al in a study concluded that the main problem of long-acting progestogens is the disruption of the menstrual cycle.[14]

In our study 38% women discontinued due to irregular bleeding which is lower than the study of Nair et al where irregular spotting occurred in 45% of women. Amenorrhea was seen in 65.3% of the women which was same as found by Nair et al where amenorrhea occurred in 65% of the women. In Nair et al discontinuation rate was 43%. Similar drop out is seen in study of Fonsea et al and Aktun et al.

Aktun et al in a study found eight (0.08%) pregnancies occurred, within 3 months of injection in 9262 women. Of 9262 cases, irregular bleeding occurred in 80% (7410) of the women. Discontinuation rate with this contraceptive method was recorded as 71% (6576) of the subjects. The rate of other predominant side effects were 8% for increase in weight, 8% for breast engorgement, 7% for mastalgia, 5% for headache.[15]

Lavanya et al, in their study concluded that, 70% of the women had irregular vaginal spotting and this was cited as the reason for discontinuation by almost 45% of these women.[16] There were no reports of heavy bleeding. 65% developed amenorrhea which resulted in discontinuation in 11.7% of these women. Weight gain was only marginal and could not be attributed to DMPA alone. In postpartum women, lactation remained unaffected. The discontinuation rate was 42.5 per cent, all the discontinuations reported in the study was either after 1st or 2nd injection when the menstrual irregularities were at their peak16. 65% of acceptors who completed the study said they would recommend this method to others because of convenience and privacy.

Ruminjo et al in a study of Comparative acceptability of combined and progestin-only injectable contraceptives in Kenya concluded that the 1-year continuation rate was 75.4% for Depo-Provera users. Main reasons for discontinuation included difficulty making clinic visits (40%), menstrual changes (12.5%) and non-menstrual problems (12.5%). 70.6% of the Depo-Provera users were amenorrheic after 12 months.[17]

Wellings et al in a study showed half of respondents (50.3%) thought that irregular bleeding deterred women from using LARC and 20.6% were concerned about high discontinuation rates.[18]

Aladag et al found satisfaction as one of the most important factors affecting contraceptive selection and its continuation. They also mentioned that satisfaction from a method is often influenced by frequency of side effects and the outcomes on individuals' health.[19]

Limitation: Sample size is small. Access to the clients was limited. Duration of study was brief. Cultural and social bias and other personal issues. Impact of the drug could not be assesed in the drop out population. Long term impact could not be assessed.

Future scopes for DMPA

DMPA can be promoted as a male contraceptive. Self-administration of DMPA-SC is feasible, acceptable, effective and improves continuation only if it is made widely available and remains a true choice for women interested in this option.[20]

CONCLUSION

Complications associated with pregnancy and childbirth is the leading cause of morbidity and mortality among women of reproductive age, particularly in less developed countries and that is why maternal health is one of the most urgent global concerns. In this context, the postpartum period is particularly important for initiating contraception to space and limit births in a healthy manner. An increase in contraceptive use during the postpartum period substantially reduces the rates of maternal and infant mortality by preventing unplanned and unwanted pregnancies.

Contraception is always associated with apprehension and misinformation and it is more in rural women due to their illiteracy, but with proper selection of cases with good counseling and conscientious follow up compliance can be improved.

Promotion of family planning and ensuring access to preferred contraceptive methods for women and couples is essential to securing the well-being and autonomy of women, while supporting the health and development of communities.

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