

ORIGINAL RESEARCH

Study on effectiveness of single dose of intramuscular depot medroxyprogesterone acetate immediately after abortion to achieve healthy timing and spacing of pregnancy

¹Dr. Shouvik Chattopadhyay, ²Dr. Shibram Chattopadhyay, ³Dr. Nabakumar Saha, ⁴Dr. Kajal Kumar Patra, ⁵Dr. Kishore P Madhwani, ⁶Dr. Isuva Mandal

¹Intern, Bharati Vidyapeeth College & Hospital, Sangli, Maharashtra, India

²Associate Professor, Department of Obstetrics and Gynaecology, Nilratan Sircar Medical College & Hospital, Kolkata, West Bengal, India

³RMO cum Clinical Tutor, N.R.S. Medical College and Hospital, Kolkata, West Bengal, India

⁴Ex-Professor and Head, Department of Gynae and Obstetrics, Gouri Devi Institute of Medical Science, Durgapur, West Bengal, India

⁵Senior Medical Consultant, Mumbai, Maharashtra, India

⁶Consultant Obstetrician & Gynecologist, Baruipur District Hospital, PG (S), West Bengal, India

Corresponding author

Dr. Kajal Kumar Patra

Ex-Professor and Head, Department of Gynae and Obstetrics, Gouri Devi Institute of Medical Science, Durgapur, West Bengal, India

Email: drmch2000@gmail.com

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ABSTRACT

Background: With one of the fastest expanding populations in the world, India urgently needs to use safe and effective contraception. An optimal contraceptive should accommodate a person's social, medical, and personal needs; still, an optimal contraceptive should be safe, effective, have few adverse effects, and require less frequent administration. **Aim:** To evaluate the effectiveness of single dosage of depot medroxyprogesterone acetate (150 mg) IM (intramuscular) administered to patients immediately after abortion in achieving healthy timing and spacing of pregnancy. **Methods:** The present study was institutional cross-sectional study. Fifty-nine women undergoing abortion between the age group of 18 – 35 years who attends MTP clinic at Eden Hospital, Medical College and Hospital, Kolkata, West Bengal, India were included in the study. Study was conducted from July to December 2023. Statistical data were analysed by using Microsoft Excel and SPSS V.20. **Results:** Out of the 59 patients who were considered 63% were between age group of 20-25 years, 31% were in the age group of 26-30 years and rest 7% were in the age group of 31-35 years. Mean age was 24.32 years. Mean period of gestation was 10.19 weeks. Mean BMI was 21.33. Only 8% of the patients reported irregularity of menstruation before they were administered DMPA. In the study 37% of the mothers who were given DMPA complained about spotting during the first follow-up after 2 weeks of administration of DMPA. During the second follow-up after 3 months of administration of DMPA, 37% patients reported Amenorrhoea and another 49% of them reported spotting. **Conclusion:** The study can conclude that a single dose of 150 mg of DMPA is effective in preventing pregnancy for 6 months. This is cost effective and convenient for the patients. So, the usage of DMPA can be more in the developing nations.

Keywords: Abortion, depot medroxyprogesterone acetate, spacing of pregnancy

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INTRODUCTION

In the context of free and informed choice, taking desired family size and fertility intentions into account, Healthy Timing and Spacing of Pregnancy (HTSP) is an intervention to support women and

families in delaying or spacing out their pregnancies to achieve the healthiest outcomes for women, newborns, infants, and children¹. In India, the "National Family and Welfare Program" encourages couples to space out their childbirths and provides incentives.

These programs are approached from the perspectives of family planning and health.²

Depot Medroxy Progesterone Acetate is an ingredient in DMPA, a hormonal contraception that is injected every three months. Progestin is circulating at a high enough level to effectively block the LH surge, inhibiting ovulation in addition to thickening cervical mucus by increasing its viscosity and blocking sperm penetration and altering the endometrium to hinder implantation.³When taken every three months, it prevents conception with a 99.7% success rate. On average, women who stop using DMPA take an additional 4-6 months to conceive compared to those who use other methods.⁴

If a woman hasn't become pregnant in up to a year after stopping, she shouldn't be concerned.⁵The duration of a woman's DMPA use has no bearing on how soon she becomes pregnant after she stops receiving injections. On the other hand, a woman who stops using DMPA may ovulate before her monthly bleeding resumes and thus become pregnant. Unlike Copper T, DMPA is discrete and easy to use.⁶

It is useful for women who wish to become pregnant in the future and is reversible. It has been demonstrated to lower the risk of ovarian and endometrial cancer, endometriosis symptoms, pelvic inflammatory disease (PID), ectopic pregnancy, and seizure disorder symptoms in women.⁷The majority of research has been conducted on subjects who received 150 mg of DMPA three months apart.

According to a comparable 2010 Scottish study, women who conceive within six months of their first miscarriage get the best reproductive outcomes and the lowest incidence of complications in their next pregnancy.⁸A similar study carried out in Bangladesh in 2012 found that if the IPI is shorter, a second pregnancy after a miscarriage will result in a live birth.⁹

The purpose of this study is to evaluate the effectiveness of single dosage of depot medroxyprogesterone acetate (150 mg) IM (intramuscular) immediately after abortion in achieving healthy timing and spacing of pregnancy [HTSP] as per WHO recommendation.

MATERIALS AND METHODS

Type of study: Present study was a institutional cross-

sectional study.

Place of study: Department of Gynaecology and Obstetrics, Eden Hospital, Medical College Kolkata, West Bengal, India.

Time of study: July 2023 to December 2023

Study Population: All patients attending MTP clinic at EDEN Hospital for management of abortion from July 2018 to Dec 2018. During the study period

Inclusion criteria: The patients who are not willing to participate are not included in the study. Also, other medical contradictions are considered during administration of DMA to the willing participants.

Exclusion criteria: Women undergoing abortion who are willing to have future pregnancies and are opting for DMPA as short term (6 months) contraception from the basket of all contraception methods. Age between 18 – 35 years.

Study parameters: Return of pregnancy of the participants has been checked by (either or), UPT – Urine for Pregnancy Test in OPD, Confirmation over phone with the mother who has done UPT after consultation with her family physician, if UPT is found to be positive, then confirmation of pregnancy be done by ultrasound.

Study Tools: Master Chart, DMPA (Antara) from family planning unit, Eden Hospital, MCH, Kolkata and statistical tools.

Following institutional ethics committee permission, the study was carried out on patients who provided written consent to be included in the study. The study was conducted on 64 willing patients who were administered single dose of DMPA. The patients were clearly instructed on the procedure and was asked to do a planned follow-up after intervals of 2-weeks, 3 months and 6 months. Out of 64 patients, 5 patients could not be communicated for further follow-ups. Hence, we considered the effective sample size of 59 patients.

Data Analysis plan-The data was tabulated in Microsoft Excel software and analysed with SPSS V.20 software. An alpha level of 5% has been taken that is if any p value is <0.05, it was considered as significant.

Ethical considerations- Study was initiated after obtaining the informed consents from the participants and ethical clearance from the institutional ethical committee.

RESULTS

Table 1: Demographic profile of study population(n=59)

	Age (Years)	Married For (Years)	Period of Gestation (Weeks)	BMI
Mean	24.32	3.45	10.19	21.33
Standard Error	0.47	0.33	0.53	0.20
Median	24.00	3.00	9.00	21.21
Mode	20.00	1.00	6.00	20.55
Standard Deviation	3.59	2.53	4.06	1.51
Minimum	20.00	0.50	5.50	18.49
Maximum	32.00	10.00	23.00	25.78
Count	59	59	59	59

Out of 59 cases we found that single dose of DMPA was effective for 58 cases and these patients did not conceive after 6 months. Only 1 case reported got pregnant within 5 months of the date of administration of DMPA.

Out of the 59 patients who were considered 63% were between age group of 20-25 years, 31% were in the

age group of 26-30 years and rest 7% were in the age group of 31-35 years. This suggest that the women studied were in their best fertility period. Meanage was 24.32 years. Mean period of gestation was 10.19 weeks. Mean BMI was 21.33. (Table 1)

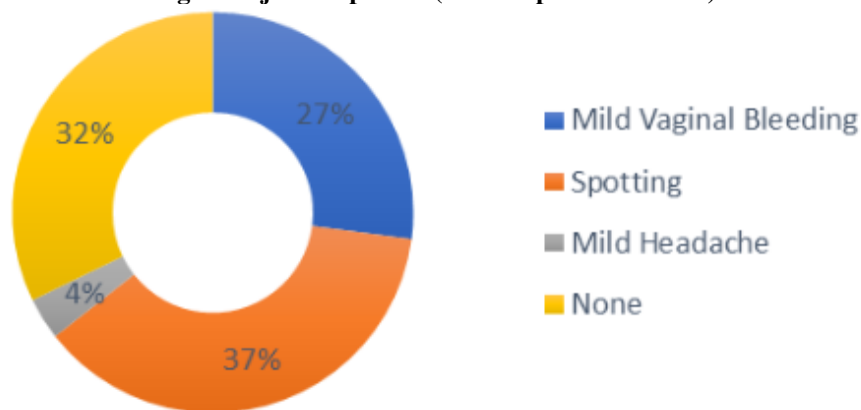
Table 2: Distribution according to past menstruation cycle, procedure undergone, . (n=59)

Parameters	Number	Percentage (%)
Past menstruation cycle		
Regular	54	92
Irregular	5	8
Procedure undergone		
Evacuation	53	90
Conservative	6	10

The patients who were administered single dose of DMPA had a history of regular menstruation. Only 8% of the patients reported irregularity of menstruation before they were administered DMPA.

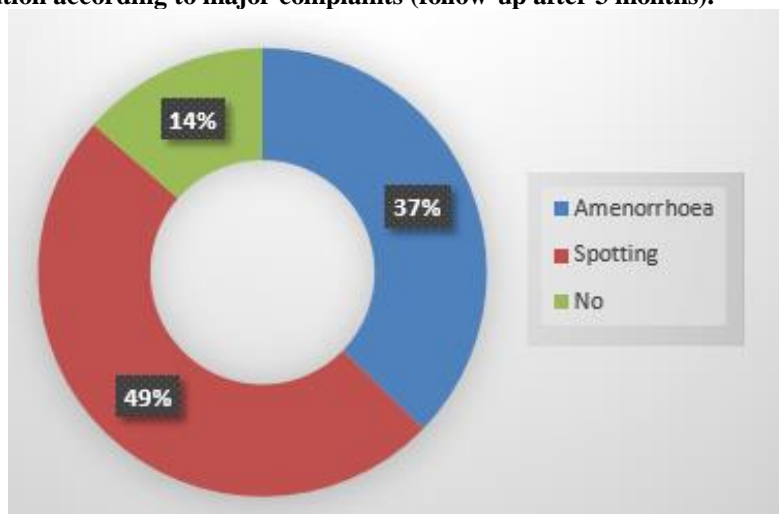
90% the patients who were administered DMPA had undergone Evacuation while the rest were given conservative treatment before administering DMPA. (Table 2)

Figure 1: Distribution according to major complaints (follow-up after 2 weeks).

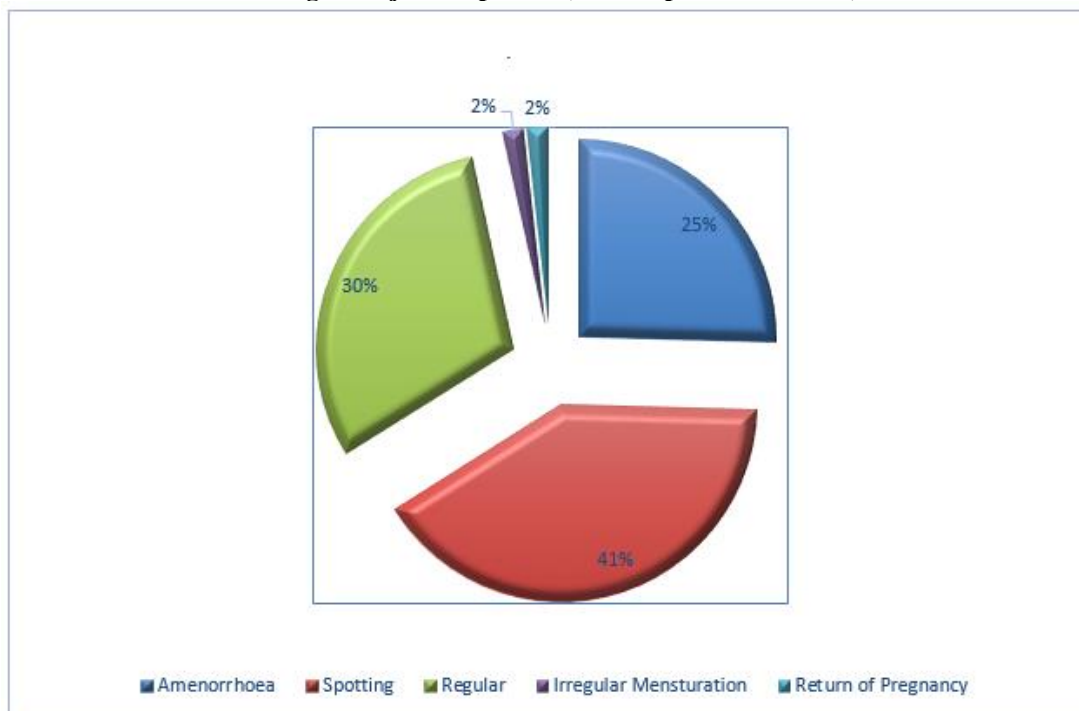


In the study 37% of the mothers who were given DMPA complained about spotting during the first follow-up after 2 weeks of administration of DMPA while another 27% reported of having mild vaginal bleeding. However, 32% of the mothers had no complaints during this first follow-up. (Figure 1)

Figure 2: Distribution according to major complaints (follow-up after 3 months).



During the second follow-up after 3 months of administration of DMPA, 37% patients reported Amenorrhoea and another 49% of them reported spotting. (Figure 2)

Figure 3: Distribution according to major complaints (follow-up after 6 months).

During the final planned follow-up after 6 months of administration of DMPA, 98.3% patients reported not to be pregnant while 1.7% was pregnant. 41% had spotting, 30% got back regular periods, 25% had amenorrhoea and 2% had irregular periods. The patients who reported spotting and amenorrhoea were confirmed not to be pregnant by UPT. The patient who was pregnant was confirmed so by UPT and then by USG. (Figure 3)

DISCUSSION

In order to ensure a healthy timing and spacing between pregnancies, a single dose of 150 mg of DMPA was given to the women in this study who had undergone abortions at Medical College Hospital (HTSP). The mothers who took part in the study were living with their partners and willing to become pregnant again in the future. The ladies were given a detailed explanation of the risks associated with pregnancy in short order, which allowed them to take advantage of the HTSP benefit for six months. Before giving out DMPA, the ladies who met the inclusion-exclusion criteria gave their consent. In order to get HTSP, they have been presented with a selection of contraceptive methods from a basket. DMPA is present in the contraceptive basket along with other methods of birth control. All moms received a comprehensive explanation of the benefits and drawbacks of DMPA. Prior to administering DMPA, all medical concerns were completed. Every woman who chose to use DMPA was included in the research. Long-acting progestogen-only injectable contraceptive DMPA is used in hormonal birth control to prevent pregnancy.¹⁰ It is administered by subcutaneous or intramuscular injection, creating a long-lasting depot from which it releases gradually over a few months. If administered after the first five days of the cycle, it takes a week to start working, and if given during the first five days of the cycle, it starts working right away. Research indicates that approximately 0.3% of students fail their first year. In

seven clinical trials, Trussell's estimated perfect use first-year failure rate for DMPA was 0.3%.¹¹

Studies have shown that DMPA has very low failure rates (0.3-0.7 /100 women years) comparable to that of implants and female sterilization.¹² However, all moms who had live births and miscarriages were included in these studies, and the dosage was given once every three months.

During the present study, the 3rd and final follow-up for the 59 mothers were done after 6 months of injection DMPA. None of the mothers had significant weight gain, suffered thromboembolic event or had loss of Bone mineral density throughout the study. Out of them 58 (~99%) mothers did not conceive and as shown by symptoms, clinical examination or urinary pregnancy test. Both an ultrasound and a urine pregnancy test (UPT) verified the single mother's pregnancy report. Merely 1.7% of the entire study population visited for routine follow-up. Which is lower than study of Fonseca et al (28%), Nayak et al (43%), and Shweta Mishra et al (17.33%).¹³⁻¹⁵

Two doses of DMPA given three months apart have been proven in prior research to be 99.7% effective in preventing pregnancy. The contraceptive effect of DMPA often lasts for four to six months after the drug is stopped. In present study, the women were administered only a single dose of DMPA and had only 1.7% positive for pregnancy, having a p - value of 0.024998 (<0.05) considered to be statistically significant.

So, it can be concluded from the study that single injection of DMPA is safe, convenient and effective method of contraception which can prevent pregnancy by and large up to 6 months. Therefore, it can be utilised as a protocol to achieve HTSP following an abortion incident as recommended by WHO.

CONCLUSIONS

Single dose DMPA(IM) can be considered for National Programs to achieve HTSP following a miscarriage or an induced abortion. This would lead to better compliance among the patients and reduce the drop-out rates. This will help in reduction of side effects of DMPA as compared to two dosages of the medicine in achieving HTSP following an abortion. A more comprehensive study with larger population size will strengthen the hypothesis. It can be used ubiquitously following an abortion in achieving HTSP to achieve the healthiest outcomes for women, newborns, infants and children

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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