

The use of Depot Medroxyprogesterone Acetate (DMPA) Injectable Contraceptive in Enugu, Nigeria.

¹ EZEGWUI HU, MBBS, FWACS, FMAS; ² IKEAKO LC, FWACS, FMCOG, FICS;

¹ OBIORA-OKAFOR NC, MBBS

¹Department of Obstetrics and Gynaecology, University of Nigeria Teaching Hospital, Enugu, Nigeria.

² Department of Obstetrics and Gynaecology, Anambra State University Teaching Hospital, Amaku, Awka, Nigeria.

ABSTRACT

CONTEXT: Contraception with Depot Medroxyprogesterone Acetate (Depo provera®) is quite effective though not without side effects that may cause discontinuation amongst acceptors.

OBJECTIVE: To evaluate client characteristics, their experiences and acceptability of Depo provera in Enugu and compare these with previous experiences elsewhere.

MATERIALS AND METHOD: A review of the family planning records of new acceptors who used Depo provera between 1st January 2000 and 31st December 2005 at the family planning clinic of University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu.

RESULTS: Within the study period, 684 new clients accepted Depo provera, accounting for 21.4% of all new acceptors for various forms of contraception. The mean [\pm SD] age and parity of the 590 acceptors whose records were available were 34.40 ± 6.03 years and 5.52 ± 2.02 respectively. Seventy percent (70%) of the clients had 5 or more children. Most (51.6%) had primary education. Seventy percent of clients with 5 or more children wanted no more children while 30% of those gainfully employed use of Depo provera for child spacing. Fifty seven percent of clients accepted Depo provera within a year following confinement and 80.2% of them were breast feeding. Complications occurred in 54.2% of all acceptors, with menstrual abnormalities occurring in 94.4% of them. Secondary amenorrhoea was the commonest menstrual anomaly occurring in 81.1% of clients with menstrual problems. Discontinuation in use of Depo provera was 51.5% after the first one year. Irregular injection schedules and default were common with a continuation rate of 25.6% at the end of the observation period. However, the complaints of side effects appeared to wane beyond the second year of use. Three accidental pregnancies (0.5%) occurred during the study period.

CONCLUSION: Depot medroxyprogesterone acetate injectable contraceptive is an effective method of contraception in Enugu. It is accepted mainly by clients that have completed their family and are breast feeding. Awareness of its side effects obviously enhances continuation.

KEY WORDS: Contraception, Depo provera, Acceptability, Injectable, Discontinuation.

INTRODUCTION

Contraception has been identified as a veritable means of combating the problems of unwanted pregnancy and unsafe abortion¹. It is also an effective means of family planning and fertility control and thus quite important in promoting maternal and child health.

Contraception can be achieved by different methods. Depot medroxyprogesterone acetate (DMPA), also known as Depot provera^R is a long acting reversible hormonal birth control drug that is injected every 3 months. Depo provera has been utilized by over 30 million women worldwide². In some centres, DMPA has surpassed intrauterine contraceptive device (IUCD) as the most popular method³.

High dose progestogen-only contraceptives such as injectable DMPA inhibit follicular development and prevent ovulation as their primary mechanism of action⁴.

DMPA has the advantages of low failure rate, good patient compliance, especially in women who forget to take tablets, privacy, convenience, reversibility and safety. Unlike other long acting methods such as IUCD and sub dermal implants such as Norplant, it requires no special training for its administration⁵. Additional benefits include no adverse effects on lactation, reduction in the risk of endometrial carcinoma by 80%, decreased incidence and severity of sickle cell crisis in women with sickle cell disease and an association with increased levels of iron⁶. This is very important in developing countries with high prevalence of anaemia. It provides an alternative to more invasive methods such as IUCD and tubal ligation.

However, the success of Depo provera has been limited by its side effects primarily changes in menstrual pattern with amenorrhoea and spotting reported as the most common reasons for discontinuation⁵. It may take up to one year for fertility to return following cessation of Depo provera and this makes it an inappropriate method for women seeking short term contraception. Another limitation has been the intramuscular route of administration which requires a clinic visit every 12-14 weeks of administration. A subcutaneous version of the drug is now available (depo sub Q provera 104) that delivers a lower dose of medroxyprogesterone acetate than the intramuscular route (104mg vs 150mg)⁷. The subcutaneous route opens the possibility for home-self

Date Accepted for Publication: 20th March, 2012

NigerJMed 2012;266-271

Copyright ©2012. Nigerian Journal of Medicine

injections which may enhance compliance.

In an effort to improve cycle control and reduce irregular menstrual bleeding, once-a-month combination injectables (progestogen and oestrogen) with highly predictable bleeding patterns were introduced⁸.

The characteristics and experiences of women who accepted this form of contraception was assessed with a view to determining its popularity and offering suggestions likely to enhance its utilization.

MATERIALS AND METHODS

The records of women who accepted Depo medroxyprogesterone acetate (DMPA) injectable contraception from 1st January 2000 to 31st December 2005 were retrieved from the family planning clinic of the University of Nigerian Teaching Hospital, Enugu (UNTH) and reviewed.

Enugu is located in south eastern Nigeria and has a population of 717,291 according to 2006 national census figure. It is inhabited mainly by ethnic Ibos with civil service and subsistence farming as the main occupation.

During the period nurses and resident doctors provided contraceptive services and this involved appropriate counselling to allow for informed choice, clinical assessment and investigations where applicable to exclude contraindications especially pregnancy.

150mg of DMPA was administered intramuscularly with repeat injections every 90 days. On the next appointment, the patients were asked if they had any complaints and any side effect experienced was documented. Complaints about changes in menstrual cycle were recorded. Those who required further evaluation for their complaints were taken to see the gynaecologist.

A patient was considered lost to follow-up if she failed to turn up on two consecutive follow up visits. Data extraction was done by trained staff using pre-established and piloted data extraction forms. Results were based on data obtained from the cards of 590 new clients that were retrieved.

Particular to this study were demographic characteristics of acceptors, sources of awareness, complications, discontinuations and failure rates among others. The data was analysed using tabulations and simple percentages.

RESULTS

There were 3,198 new acceptors for the various forms of contraceptive services offered at the family planning clinic during the period of study.

Table 1 shows the contraceptive methods and their proportions. Depo Provera was the second most

commonly accepted method after the intrauterine device. The age range and mean (\pm SD) of the clients were 15-54 years and 34.4 \pm 6.0 years respectively. The median age was 34 years.

The parity of clients ranged from 1 to 12 with a mean of 5.52 \pm 1.73. Seventy percent of clients had a parity of 5 or more.

Table I: Contraceptive choices of 3,198 new clients

Choice of Contraception	Frequency	%
Intrauterine device	1,754	54.8
Depot provera®	684	21.4
Norplant	492	15.4
Barrier methods	108	3.4
Contraceptive pills	64	2.0
Bilateral Tubal Ligation	56	1.8
Noristerat	40	1.2
TOTAL	3,198	100.00

Fifty one percent of clients had primary education or less but among those with 5 or more children 60% had primary education. Only 2 clients (0.3%) were Muslims. Others were Christians of unspecified denominations. Friends and relatives were the leading sources of initial information about injectable contraception making up 50.2%. Table 11 depicts the various sources.

Table II: Sources of awareness of Injectable contraception

Sources	Frequency	%
♦ Friends /Relatives	296	50.2
♦ Clinic Personnel	136	23.0
♦ Radio	54	9.2
♦ Community health workers	33	5.6
♦ Outreach personnel	31	5.3
♦ Television	14	2.3
♦ Print media	11	1.9
♦ Others	15	2.5
TOTAL	590	100.00

The reasons for contraception were either for child spacing or limitation of conception. Fifty four of clients wanted no more children. Seventy of those who wanted no more children were grandmultiparous. Seventyfive of clients who had 1-4 children employed DMPA for child spacing.

Seventy two(12.2%) clients were referred for contraception following complications in the last pregnancies. Complications they had included caesarean section for various reasons (45.0%), postpartum haemorrhage (22.0%), abortion (13.0%), ante partum haemorrhage (6.0%) and eclampsia (3.0%). Others were preterm labour and perinatal death.

Four hundred and seventy three (80.2%) of those who accepted Depo-provera within the first year of confinement were breastfeeding.

Table III: shows the number of injections received by each subject and this ranged from one to twenty four. One hundred and fifty eight(26.8%) clients received only one injection while 178(30.2%) clients discontinued after receiving 2-4 injections. At the end of the study 151(25.6%) clients were still attending the clinic and 4 of them had taken 25-28 injections. Irregularity of injections was common.

abnormalities as the reason. One hundred and forty nine (69%) clients discontinued because of secondary amenorrhoea while irregular bleeding accounted for 6.4%.

Only 85(19.4%) of 439 clients who discontinued use of DMPA opted for other forms of contraceptive methods. Of these 61(71.8%), 12(14.1%) and 8(9.4%) chose intrauterine device, oral contraceptive pills and Norplant respectively. The remaining chose implanon (2.3%) and Bilateral tubal ligation (2.3%). Three clients (0.5%) got pregnant after having commenced DMPA injectable contraceptive. One ended in spontaneous miscarriage.

Table III: Number of Injections received by clients vs discontinuation

Number of injections received	Frequency of subjects	Discontinuation of Depoprovera by number of injections received	Percentage discontinuing Depoprovera by number of injections received (%)	Cumulative discontinuation rate (%)	Continuation rate (%)
1	158	154	26.10	26.10	73.9
2-4	178	150	25.42	51.52	48.5
5-8	121	79	13.39	64.91	35.1
9-12	59	31	5.25	70.16	29.8
13-16	30	17	2.88	73.04	27.0
17-20	20	6	1.02	74.06	25.9
21-24	20	2	0.34	74.40	25.6
25-28	4	--	--	--	--
TOTAL	590	439	74.4	74.4	25.6

Table IV shows the complications reported by clients. Three hundred and twenty(54.2%) clients reported complications. Three hundred and two (94.4%) had menstrual abnormalities alone or in combination with other problems. Two hundred and forty five (87.7%) of clients who had menstrual abnormalities complained of secondary amenorrhoea. Two hundred and four clients had only secondary amenorrhoea while the rest had it in combination with menorrhagia, prolonged menstrual periods, intermenstrual bleeding or spotting.

Other complications experienced by clients included weight gain (6.1%), hypertension (1.7%), and headache (0.7%).

Table V represents the relationship between the number of DMPA injections received and incidence of menstrual disruption. Three hundred and two (51.2%) clients complained of at least a form of menstrual abnormality with a total, of 365 complaints made in this regard. Various complaints appeared to peak in the second year of commencing DMPA (5-8 injections) and thereafter declined.

Table VI shows the reasons for discontinuation. Two hundred and twenty three (50.8%) of 439 clients discontinued use of DMPA voluntarily without giving specific reasons. Of 216 clients who had reasons for discontinuing use of DMPA, 177(81.9%) had menstrual

Table IV: Side effects experienced by clients

S/N	Side effects	Frequency	%
1	Menstrual Anomalies		
	♦ Secondary amenorrhoea	245	59.5
	♦ Spotting/ intermenstrual bleeding	82	19.9
	♦ Prolonged menses	36	8.7
	♦ Post-coital bleeding	2	0.5
	Subtotal	365	88.6
2	Weight related problems		
	♦ Weight gain	26	6.3
	♦ Weight loss	1	0.3
	Subtotal	27	6.6
3	Others		
	♦ Hypertension	7	1.7
	♦ Headache	3	0.7
	♦ Abdominal/ waist pain	7	1.7
	♦ Breast lesions	2	0.5
	♦ Vulvovaginitis	1	0.3
	Subtotal	20	4.9
∑ Total Complaints		412	100%

The most prominent side effect was chosen.

Table V: Number of injections received vs incidence of menstrual disruption

Number of injections received	MENSTRUAL DISORDERS				Total
	Secondary amenorrhoea	Spotting/ Intermenstrual bleeding	Prolonged menses	Post Coital bleeding	
1	6	8	8	--	22
2-4	57	21	14	--	92
5-8	76	26	13	--	115
9-12	44	12	1	--	57
13-16	24	5	--	1	30
17-20	18	7	--	--	25
21-24	16	3	--	1	20
25-28	4	--	--	--	4
TOTAL	245	82	36	2	365

Table VI: Reasons for discontinuation of DMPA use

Reasons	Frequency	%
Did not specify	223	50.8
Secondary amenorrhoea	149	33.9
Spotting/ intermenstrual bleeding	14	3.2
Other menstrual problems	14	3.2
Excessive weight gain	6	1.4
Hypertension	5	1.1
Wants to get pregnant	15	3.4
Alternative contraceptive choice	11	2.5
Spousal objection	2	0.5
TOTAL	439	100%

DISCUSSION

DMPA has remained a popular contraceptive method in Nigeria, second only to intrauterine contraceptive device⁹. This was evident in this study where it accounted for 21.4% of all new acceptors. This compares favourably with other reports³. Its attractions are its convenience of administration and effectiveness which in this review was 99.5%. DMPA is also suitable in the post partum period as studies indicate that rather than inhibit lactation, the reverse is the case¹⁰. Four hundred and seventy three (80.23%) of those who accepted DMPA within the first year of confinement in this review were breastfeeding.

The mean age and parity in this review are similar to other reports from Nigeria¹¹. However, these were at variance with reports from western countries¹² which showed a lower mean age and parity of 22 years and 1.4 respectively as against 34.4 years and 5.52 respectively observed in this study. This may be attributed to wide acceptance of contraception even at younger ages and the tendency to have smaller family size in developed countries. Seventy percent of the clients in this study were grandmultiparous. High parity in developing countries has been attributed to the prevailing high perinatal and infant mortality¹³, the desire to have a

balanced sex distribution among the offsprings and the need to preserve matrimonial inheritance¹⁴.

Only 20% of the acceptors were less than 30 years of age with a glaring preference for DMPA among older women of higher parity who have completed their family size and should have had sterilization as a better option. However, low rate of Bilateral tubal ligation (BTL) in Nigeria could be attributed to low awareness, fear of reincarnation without fallopian tubes, death of spouse and surgery¹⁵.

Most clients are Christians indicating the dominant religion in the area of study. Similar studies in Saudi Arabia⁵ showed dominance of the major religion of this area indicating that the acceptance of DMPA transcends both cultural and religious affiliations¹⁶.

Majority (50.2%) of the clients in this study derived their awareness from friends/relatives. This is contrary to other reports that found health workers as the major source of information¹¹. This is worrisome as these sources may become vehicles for inaccurate dissemination of information thus entrenching the myths and misconception about modern contraceptives¹⁷. Family planning programmes should take primary responsibility for disseminating accurate information

and correcting misconception.

A total of 439(74.4%) had discontinued use of DMPA at the end of the study period. This agrees with other reports from Nigeria¹⁸. This was however very high when compared to the discontinuation rate of 4% recorded in Saudi Arabia⁵. This was attributed to the successful management of method-related side effects in that study.

There was a definite trend of decline in the number of clients discontinuing DMPA as the number of injections increased (table v). With increasing duration of use, the frequency of bleeding and spotting disorders decreases and secondary amenorrhoea becomes more common. However, in older higher parity women desiring long term contraception, regular counselling at initiation and follow up have been shown to promote patient satisfaction and continuation. In a study involving 421 women in China¹⁹, 204 received intense structured pre-treatment and on going counselling on the hormonal effects and probable side effects of DMPA and 217 received only routine counselling. At one year, the total cumulative termination rates were 11.3% and 42.4% respectively.

The menstrual disorders are due to the effect on ovarian function. Fluctuating endogenous oestrogen production from irregular follicular growth leads to irregular bleeding whereas the secondary amenorrhoea has been attributed to ovarian and endometrial atrophy²⁰.

The occurrence of the side effects; weight gain, headache, hypertension, abdominal pain noted in this review is in keeping with other studies¹⁸. In North Carolina²¹, these non-bleeding side effects were responsible for discontinuation in 28% of the clients. The weight gain has been attributed to the anabolic effect of progestogen in the body while the sodium and water retention which could occur as a result of progestogen contraceptive method may account for the increase in blood pressure²².

The large number of clients 158 (26.78%) who had only one injection contributed largely to clients lost to follow up. This underscores the need for adequate counselling before initiation as some of them may have needed short term contraception or were put off by menstrual disturbances.

Those who discontinued use of DMPA opted for other forms of contraceptive method. This agrees with the findings of Ogedengbe et al²³ that former users of injectables were more likely to change to another method unlike for pill and IUD users who were more likely to choose the method again.

Not a few patients had their injection schedules

irregularly and as such there is a remote possibility that pregnancies may have occurred and were unreported. There were three reported accidental pregnancies despite the DMPA's high potential for effectiveness. However, it's effectiveness of 99.5% in this study compared well with other reports¹¹.

DMPA is a highly effective and reversible form of contraception though with side effects, especially menstrual changes which may cause discontinuations. This emphasizes the need for adequate information to educate clients and boost their understanding of DMPA and its probable side effects. Supportive counselling during initiation of contraception and re-enforcement during follow up visits can go a long way in enhancing patient satisfaction and hence continuation despite adverse effects. There is need for adequate management of method-related side effects. Also the difference in the age range of acceptors in this study and similar ones across Nigeria and the western world is indicative of the fact that younger women in their teens are yet to accept contraceptive use in our society despite their huge contribution to abortion-related morbidity and mortality¹⁹.

This obviously calls for concerted efforts to educate the target population early enough in schools regarding contraception as well as enlighten both parents and health service providers so as to make them more receptive to younger clients without being biased or judgemental. There is need for aggressive management of method-related side effects.

In conclusion, Depot medroxyprogesterone acetate injectable contraceptive is an effective method of contraception in Enugu. It is accepted mainly by clients that have completed their family and are breast feeding.

REFERENCES

1. Adewole IF, Oye-Adeniran BA, Iwere N, Oladokun A, Abedegesi A, Babarinsa AI. Contraceptive usage among abortion seekers in Nigeria. *West Afr J Med* 2002; 21(2): 12-14.
2. Kaunitz AM. Current options for injectable contraception in the United States. *Semin Reprod Med* 2001; 19(4): 331-7.
3. Ameh N, Sule ST. Contraceptive choices among women in Zaria Nigeria. *Nig J Clin Pract* 2007; 10(3): 205-207.
4. Glassier A. contraception. In: Degrost LJ, Jameson JL (eds). *Endocrinology* (5th ed), Philadelphia: Elsevier Saunders. 2006; 2993-3003.
5. Sobande AA, Al-Bar HM, Archibong EL, Sadek AA. Efficacy and acceptability of depo-medroxyprogesterone acetate injection. *Saudi Med J* 2000; 21(4): 348-351.
6. Westoff C. Depo-medroxyprogesterone acetate

- injection (Depo Provera): a highly effective contraceptive option with proven long-term safety. *Contraception* 2003; 68(2): 75-87.
7. Arias RD, Jain IK, Brucker C, Ross D, Ray A. Changes in bleeding patterns with depo medroxyprogesterone acetate subcutaneous injection 104mg. *Contraception* 2006; 72: 234-8
 8. Newton J. Contraception, sterilization and abortion. In: Shaw WR, Soutter WP, Stanton SL (eds): *Gynaecology*. Edinburgh, Churchillill Livigstone. 1992: 291-312.
 9. Oye-Adeniran BA, Adewole IF, Umoh AV, Oladokun A, Abadegesin A, Ekanem EE et al. Community based study of contraceptive behaviour in Nigeria. *Afr J Reprod Health* 2006; 10(2): 90-104.
 10. Rutter T. The future for injectable contraceptives. *Afr Health* 1993; 15(3): 18-9.
 11. Abasiattai AM, Udoma EJ, Ukeme E. Depot medroxyprogesterone injectable contraception at the University of Uyo Teaching Hospital, Uyo. *Annals of African Medicine*. 2010; 9(2): 81-85.
 12. Sneed R, Westhoff C, Morroni C, Tiezzi L. A prospective study of immediate initiation of depo medroxyprogesterone acetate contraceptive injection. *Contraception* 2005; 71(2): 99-103.
 13. Aisien AO, Lawson JO, Okolo A. Two years prospective study of perinatal mortality in Jos, Nigeria. *Int J Obstet Gynecol* 2000; 71: 171-173.
 14. Duze MC, Mohammed IZ. Male knowledge, Attitudes, and Family Planning Practices in Northern Nigeria. *Afr J. Reprod Health* 2006; 10(3): 53-65.
 15. Mutahir JT, Aisien AO, Ujah IAO. A review of bilateral tubal ligation at caesarean section in Jos, Nigeria. *Nig Postgrad Med J*. 2007; 7: 252-255.
 16. Mia AR, Siddiqui NI, Islam MN, Khan MR, Shampa SS, Rukunuzzaman M. Effects of prolonged use of injectable hormonal contraceptive on serum lipid profile. *Mymensingh Med J* 2005; 14(1); 19-21.
 17. Katz KR, Johnson LM, Jonowitz B, Carrana JM. Reasons for the low intrauterine contraceptive device in El-Salvador. *Int Fam Plann Persp* 2002; 28:26-31.
 18. Ojule JD, Oriji VK, Okongwu C. A- five year review of the complications of Progestogen only injectable contraceptive at the University of Port Harcourt Teaching Hospital. *Nig J Med* 2010; 87-95.
 19. Lei Z, Wu S, Garceau RJ. Effect of pre-treatment counselling on discontinuation rates in women given depo-medroxyprogesterone acetate for contraception. *Zhonghua Fu Chan ke Za Zhi* 1997; 32(6):350-3.
 20. Sathyamala C. An epidemiological review of injectable contraceptive Depo-Provera. *Indian J Med Ethics* 2005; 2(1); p31.
 21. Potter LS, Dalberth BT, Canamar R, Betz M. Depot medroxyprogesterone acetate pioneers: A retrospective study at a North Carolina health department. *Contraception* 1997; 56(5): 305-312.
 22. Aisien O. Contraception with levonorgestrel subdermal implants (Norplant[®]) in Benin-City, Nigeria. *Afr J Reprod Health* 2007; 11(1):90-97.
 23. Ogedengbe OK, Giwa-Osagie OF, Ola R, Fasan MO. Contraceptive choice in an urban clinic in Nigeria. *J Biosoc Sci* 1987; 19:89-95.