



Review of Contraception with Depot Medroxyprogesterone Acetate at the University of Port Harcourt Teaching Hospital, Port Harcourt, Southern Nigeria

Oranu Emmanuel Okwudili¹, Ojule John Dimkpa^{1*} and Okpani Jude Okocha¹

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

Authors' contributions

This research work was carried out in collaboration with all the authors. Author OEO designed the study, performed the analysis and wrote the first draft of the analysis. Author OJD managed the analyses of the study, did some literature search and edited the manuscript. Author OJO collected the raw data, did some literature search and participated in data analysis. All the 3 authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJMMR/2016/26504

Editor(s):

(1) Rui Yu, Environmental Sciences & Engineering, Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, USA.

Reviewers:

(1) John L. Powell, University of North Carolina, USA.

(2) Catherine M. Ngoma, University of Zambia, Lusaka, Zambia.

Complete Peer review History: <http://sciencedomain.org/review-history/14658>

Original Research Article

Received 21st April 2016
Accepted 3rd May 2016
Published 17th May 2016

ABSTRACT

Aims: To re- evaluate the use, effectiveness, acceptability and side effects of depot medroxyprogesterone acetate in Port Harcourt, Southern Nigeria.

Study Design: Descriptive retrospective analysis.

Place and Duration of Study: Family planning clinic, University of Port Harcourt Teaching Hospital, (UPTH), Port Harcourt Nigeria, between 1st January 2004 and 31st December, 2013.

Methodology: The case files of all new clients who accepted and used depot medroxyprogesterone acetate at the UPTH were retrieved and their data including the socio-demographic characteristics, side effects, reasons for family planning extracted, coded and entered into a data bank and analysed using SPSS for windows 19.0 version and results

*Corresponding author: E-mail: ojulejohn@yahoo.com;

expressed in percentages and presented in tables and figures.

Results: Six hundred and seventy seven clients out of the total of 7001 new acceptors of contraception during the study period used depot medroxyprogesterone acetate (DMPA) giving an uptake rate of 9.7%. Three hundred and fifty three (52.1%) used it for child spacing while 324 (47.9%) used it for terminal fertility control. Secondary amenorrhea remained the commonest side effect occurring in 503 (74.3%) women. Up to 482 (71.2%) clients were lost to follow up, 43 (6.5%) discontinued voluntarily while 145 acceptors continued to use DMPA, giving a continuation rate of 22.5%. No unintended pregnancy occurred at the end of the observation period, giving a Pearl Index of 0/100 woman years.

Conclusion: Depot medroxyprogesterone acetate is highly effective and safe method of fertility control but with declining acceptability, high default and low continuation rates.

Keywords: Contraception; medroxyprogesterone; Port Harcourt; Nigeria.

1. INTRODUCTION

Depot medroxyprogesterone acetate (DMPA) is a long acting reversible contraceptive, highly effective, safe and widely accepted method of fertility regulation [1-4]. The ease of storage and administration makes it more acceptable in the tropics.

With deep intramuscular administration of a dose of 150 mg of DMPA, a peak serum level of 7 ng per milliliters is achieved within few days. This gradually declines until it becomes undetectable 120 to 200 days [5] after, necessitating a repeat dose at 3 monthly intervals.

Depot medroxy progesterone inhibit follicular development and hence prevent ovulation by suppression of gonadotropin releasing hormone induced leuteinizing hormone surge at the pituitary level [4,5]. Thickening of the cervical mucus making it impervious to sperm and thinning the endometrial wall thereby making implantation difficult are other mechanisms of action of DMPA [6]. Unlike etonogestrel (Implanon) where return to fertility on withdrawal is almost immediate, (within 24hrs), [1,7] it takes months for return to fertility after stopping depot medroxyprogesterone acetate.

Depot medroxy progesterone is a very effective contraceptive method with a perfect use pearl index of less than 1 per 100 women years [8]. User and perfect use effectiveness approximate each other.

Non contraceptive benefits of DMPA include decreased risk of uterine fibroids, pelvic inflammatory disease, iron deficiency anaemia and dysmenorrhea [4,9]. Others include decreased risk of functional ovarian cyst, ectopic pregnancy and symptoms of endometriosis.

Menstrual irregularities have remained common and worrisome unwanted effects of Depo Provera that may warrant a change in method [10-12]. This range from spotting of blood per vaginam, intermenstrual bleeding to amenorrhea. Concern on weight gain is not different from same impact from other hormonal contraceptives and is about 2 kilograms mean weight gain [13]. Occasionally, headache, breast bloating, loss of bone density, reduced libido, raised blood pressure and slight depression may occur [3] and vary from one study to another.

Port Harcourt is the capital city of the oil rich Rivers state of Nigeria with a yearly net influx of people and hence densely populated. The University of Port Harcourt Teaching Hospital (UPTH), draws its patients from this population and its extended catchment areas that traverse the difficult terrain of Niger delta area of Nigeria.

Family planning services have been available in the UPTH since 1986 and DMPA has remained a popular contraceptive method in the centre but studies have remained scanty and none in the last decades.

Periodic evaluation is therefore necessary to provide updates on the use, effectiveness, side effects and acceptability of DMPA, in Port Harcourt, Southern Nigeria.

2. METHODS

The family planning clinic of UPTH was established in 1986 and provides wide range of contraceptive services including oral contraceptives, injectable contraceptives, subdermal implants, intra uterine devices, barrier methods and bilateral tubal ligation. It has a robust staff base with consultant family planning physicians, family planning nurse practitioners,

rotating residents and students and other support staff. The clinic runs from 8 am to 4 pm Monday to Friday.

It was a 10-year retrospective study of clients who accepted and used DMPA at the family planning clinic of the University of Port Harcourt Teaching Hospital between 1st January 2004 and 31st December 2013. Approval for the study was given by the Hospital Ethics committee.

At presentation, prospective clients are adequately counseled by family planning nurse practitioners and guided to make an informed contraceptive choice suitable for them. Thereafter, a full medical history is taken and thorough physical examination done. Pregnancy test is usually done to exclude pregnancy. Those who were pregnant, had unexplained vaginal bleeding or did not give consent were excluded.

Intramuscular injection of 150 mg of depot medroxyprogesterone acetate is given into the gluteal or deltoid muscle within the first 7 days of a normal menstrual period when the menstrual dates are known, after abortion or six weeks after delivery in breastfeeding mothers who are yet to resume menstruation. Repeat injections of DMPA were given every 12 weeks. At each visit all complaints volunteered by the clients were documented. The weight, blood pressure and result of urinalysis were recorded in the clients case files. A client was regarded lost to follow up if she defaulted more than twice from scheduled visit.

The case notes of the clients who accepted and used DMPA between 1st January 2004 and 31st December 2013 were retrieved from the records section of the UPTH family planning clinic and their data including age, religion, parity, marital and educational status, desire for further pregnancy, side effects, complications and source of information were extracted using a pro forma. The data were coded and entered into a personal computer and analyzed using SPSS for windows 19.0 version and expressed in figures and percentages and presented in tables.

3. RESULTS

Out of the 7001 new acceptors of modern contraception at the family planning clinic of UPTH during the study period, 677 chose depot medroxyprogesterone acetate, giving an acceptance rate of 9.7%. Three thousand, five

hundred and twenty clients (50.3%) collected male condoms, making it the most commonly accepted contraceptive method, while 30 (0.4%) clients accepted the foam tablets making it the least commonly accepted contraceptive. Table 1 shows the pattern of acceptance of the various family planning methods during the period of observation.

Table 1. Pattern of acceptance of modern contraceptive methods (n=7001)

Method	Number	Percentage
Condom	3520	50.3%
IUD	1119	16.0%
DMPA	677	9.6%
Implants	537	7.7%
OCP	534	7.6%
NET-EN	398	5.7%
BTL	186	2.7%
Foam tablets	30	0.4%
Total	7001	100%

Of the 677 clients who accepted DMPA, 353(52.1%) used it for child spacing, while 324 (47.9%) clients used it for terminal contraception. Up to 71.2% (482) of the clients were lost to follow up while 43 (6.4%) discontinued voluntarily due to desire for conception, method change and intolerable side effects. One hundred and fifty two clients continued with DMPA at the end of the study period, giving a continuation rate of 22.5%.

Fig. 1 depicts the yearly distribution of acceptors of DMPA which rose from 93 clients in 2004 to a peak at 143 in the subsequent year and thereafter declined to 30 acceptors at the end of the study period in 2013.

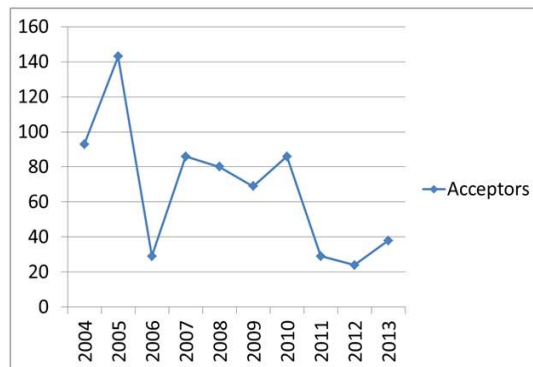


Fig. 1. Yearly distribution of acceptors of DMPA

Table 2 shows the socio-demographic characteristics of the DMPA acceptors. The age range of acceptors of DMPA was 20-51 years with a mean age of 34.24 ± 3.6 years. Two hundred and sixty (33.9%) clients were in the age range of 30-34 years which was the most frequent age group, while 51(7.5%) were aged 40 years and above. The parity ranged from 1 to 11, with a mean parity of 3.6 ± 1.7 deliveries. Four hundred and forty nine (66.3%) women were in the parity range of 2-4.

Table 2. Socio-demographic characteristics of acceptors of DMPA (n= 677)

Parameter	Number	Percentage
Age (years)		
20-24	30	4.4%
25-29	174	25.7%
30-34	260	38.4%
35-39	162	24.0%
≥40	51	7.5%
Total	677	100%
Parity		
1	37	5.5%
2-4	449	66.3%
5-9	187	27.6%
≥10	4	0.6%
Total	677	100%
Educational status		
No formal education	4	0.6%
Primary	40	6.0%
Secondary	248	36.6%
Tertiary	324	47.8%
Not documented	61	9.0%
Total	677	100%

Table 3. Complications of depot medroxyprogesterone acetate

Complication	Frequency	Percentage
Secondary amenorrhea	503	74.3%
Irregular menses	167	24.7%
Weight gain	93	13.7%
Hypertension	11	1.6%
Lower abdominal pain	9	1.3%
Headache	8	1.2%
Chest pain	4	0.6%
Reduced libido	3	0.4%
Diabetes mellitus	2	0.3%
Palpitation	1	0.1%
Total	801	
	episodes	

The source of information on family planning was mostly from clinic personnel (64.7%), while

22.1% got their information from friends and relatives. Mass media contributed only 13.8%.

There were multiple side effects with a total of 801 episodes. Secondary amenorrhea was the most common occurring in 503 (74.3%) clients, while irregular menses occurred in 167 (24.7%) of the clients. Weight gain was the commonest non menstrual unwanted effect occurring in 93 (13.7%) clients, while palpitation was the least common as this was reported in only 1 (0.2) client. There was no unintended pregnancy among users of DMPA during the study period, giving a Pearl index of zero.

4. DISCUSSION

The depot medroxyprogesterone uptake rate of 9.7% in this study is quite low when compared to the previously reported 32% acceptance rate [2] in our centre in an earlier study. This may be as a result of exclusion of all the barrier methods in the first study and more importantly the introduction of implants in our family planning clinic in 2006 [14] which is increasingly becoming more acceptable to our women probably because of less frequent visits, more tolerable side effects and earlier return to fertility [14] associated with the subdermal implants, resulting in steady decline in the absolute number of clients opting for DMPA at the end of the study period.

Up to 47.9% of DMPA acceptors used it for 'permanent contraception' in keeping with result of previous studies [2,3] and may be due to the aversion of our women to bilateral tubal ligation because of strong cultural and religious beliefs. This is not surprising as only 2.7% of the clients over the 10 years period accepted and had tubal ligation.

It is disturbing but not surprising that the mass media have continued to play a negligible role in the dissemination of information on contraceptive commodities in this part of the world. This trend must be addressed and reversed if we aim to improve our embarrassingly low national contraceptive prevalence rate of 15% [15]. The importance of mass media in contraceptive information dissemination cannot be overemphasized.

The age range of 20-51 years with a mean age of 34.24 ± 3.6 years is in keeping with the age range of contraceptive users in general [2,3,14]. There were no acceptors below 20 years of age

in this study. This may be due to the fact that early marriage and therefore teenage pregnancies are not very common in the southern part of Nigeria. More importantly, younger adolescents may not opt for DMPA because of its adverse effect on bone mineral density [16].

Menstrual side effects especially the secondary amenorrhea rate of 74.3% in this study is not surprising as this has remained the most common complication in several studies [2-4,] and may be responsible for the very high discontinuation rates. Weight gain was the most common non menstrual side effect occurring in up to 13.7% of our clients and which has reportedly lead to discontinuation in some studies [3]. The issue of significant weight gain attributable to hormonal contraception has remained controversial with some school of thought ascribing the apparent weight gain while on hormonal contraceptive to age related events and not necessarily due to hormonal effect.

The Pearl index of zero in this study is not surprising because DMPA has consistently remained a very effective contraceptive in keeping with results of other studies [3,4,17].

Majority of our clients were lost to follow up in this study. This is similar to findings in earlier studies in our centre [2,3]. This again may not be unconnected to the nature of Port Harcourt city with many health care facilities which provide injectable contraceptive services at short distances and clients criss-cross these facilities to access this contraceptive service. Additionally, the easy dislocation and relocation of accommodation occasioned by the heavy human traffic in and out of Port Harcourt, the capital city of the oil rich Rivers state of Nigeria worsens this problem. Clients therefore receive the next due dose where ever they find themselves in the service chain and this may explain the low continuation rate of 22.5% at the end of the observation period. This is at variance with the findings in users of other longer acting reversible contraceptives with minimal service provider attention and therefore giving clients enough time to return to their initial port of entry into the family planning care provider system on appointment.

5. CONCLUSION

In conclusion, though depot medroxyprogesterone acetate is very effective

and safe method of contraception, the acceptance rate is rapidly dropping in Port Harcourt Southern Nigeria due to the availability and a trending global shift towards the longer acting reversible contraceptives with probably comparatively less menstrual side effects and minimal service provider attention. Efforts should therefore continue to be made to provide these longer acting contraceptives, (LARCs) even in peripheral centres to expand its availability in our remote health facilities.

ETHICAL APPROVAL

Ethical clearance was given by the Hospital's Ethics Committee

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Glasier A. Contraception. In: Edmonds DK (eds). Dewhurst's Textbook of Obstetrics and Gynaecology. 7th edition. Blackwell publishing, Oxford. 2007;229-317.
2. Okpani AOU, Kua PL. Contraception with medroxyprogesterone acetate in Port Harcourt, Nigeria. Trop J Obstet Gynaecol. 2002;19(2):107-111.
3. Ojule JD, Oriji VK, Okongwu C. A five year review of complications of progesterone only injectable contraceptive at the University of Port Harcourt Teaching Hospital. Niger J Med. 2010;19(1):87-95.
4. Balogun OR, Raji HO. Clinical experience with injectable progesterone only contraceptives at the University of Ilorin Teaching Hospital: A five year review. Niger Postgrad Med J. 2009;16(4):260-263.
5. Andrew M, Mini Z, Kristen E. Depot medroxyprogesterone acetate for contraception. Available:<http://www.update.com/contents/depot> Topic 5468 version 41.0.2014.
6. Glasier A. Contraception. In: DeGroot LJ, Jameson JL (eds). Endocrinology. Philadelphia. Elsevier Sanders. 2006; 2993-3003.
7. Design and composition of Implanon. Implanon Monograph. N.V. Organon. 2005;11-15.

8. Melsa EP, Kathryn MC. When can a woman repeat progesterone only injectable contraceptive. *Contraception*. 2009;80(4):391-408.
9. Kauntiz AM. Current options for injectable contraception in the United States. *Semin Reprod Med*. 2001;9(4):331-337.
10. Galio MF, Grimes DA, Lopez M, Schulz KF, d'Arcangues C. Combination injectable contraceptives for contraception. *Cochrane database systematic Review*. 2008;(4): CD004568.
11. Faculty of Sexual and Reproductive HealthCare. Progesterone only injectable contraceptive. Available: [02/FSRH/injectable/2004](http://www.fsrh.org/injectable/2004)
12. Lopez LM, Newman SJ, Grimes DA, et al. Immediate start of hormonal contraceptives for contraception. *Cochrane data base systematic review*. 2012;12: CD006260.
13. Lopez LM, Edeiman A, Chen M, et al. Progesterone only contraceptives: Effects on weight. *Cochrane data base Systematic Review*. 2013;7:CD008815.
14. Ojule JD, Oranu EO, Enyindah CE. Experience with implanon in Southern Nigeria. *J Med Med Sci*. 2012;3(11):710-714.
15. National Population Commission (Nigeria) and ICF International. 2014. Nigeria demographic and Health Survey 2013. Rockville, Maryland, USA. National Population Commission and ICF International.
16. Rashi P. Contraception. Whats new? *Literature Review*. *Gynecol Obstet*. 2009; 11:1
17. Adeyemi AS, Adekunle DA. Progesterone only injectable contraceptives: Experience of women in Osogbo, Southwestern Nigeria. *Ann Afr Med*. 2012;11(1):27-31.

© 2016 Oranu et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://sciedomain.org/review-history/14658>