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CLINICAL EXPERIENCE WITH PROGESTOGEN ONLY INJECTABLE CONTRACEPTIVE IN A TERTIARY INSTITUTION IN SOUTHERN NIGERIA: A TEN YEAR REVIEW
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# CLINICAL EXPERIENCE WITH PROGESTOGEN ONLY INJECTABLE CONTRACEPTIVE IN A TERTIARY INSTITUTION IN SOUTHERN NIGERIA: A TEN YEAR REVIEW

J. D. OJULE and E. O. ORANU

## ABSTRACT

***Background*: Progestogen-only injectable contraceptive (POIC) is reversible and widely accepted contraceptive method. Although commonly associated with menstrual irregularities, it seems a common choice among contraceptive users.**
***Objective*: To determine the socio-demographic characteristics of acceptors, prevalence rate, safety profile and efficacy of injectable progestogen only injectable contraceptives in Port Harcourt, southern Nigeria.**
***Design*: Retrospective, hospital based study.**
***Setting*: Family Planning Clinic, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria.**
***Subjects*: One thousand and seventy five women who accepted and used progestogen-only injectable contraceptives between 1st January 2004 and 31st December, 2013.**
***Results*: There were 1075 (32.15%) acceptors of POIC out of the 3481 total acceptors of contraception during this period. Six hundred and seventy seven (62.98%) used depot medroxyprogesterone acetate while 398 (37.02%) women used norethisteroneenanthate. Up to 614 (57.1%) clients used it to space pregnancies while 461 (42.9%) used it for 'terminal' contraception. Secondary amenorrhoea was the most common side effect occurring in 781 (72.7%) women. Eight hundred and fifty six (79.6%) were lost to follow up while 57 discontinued POIC use due to desire for pregnancy, implant insertion and complications such as weight gain, giving a discontinuation rate of 5.30%. No pregnancy was reported among these women during this period, giving a pearl pregnancy index of zero.**
***Conclusion*: Progestogen only injectable contraceptive is still a common contraceptive option in our centre. Though efficacy and safety profile is relatively high, acceptance is dropping.**

## INTRODUCTION

In spite of the introduction of family planning services in the developing countries over the years, fertility rates in these countries are still reportedly high. In Nigeria, national contraceptive prevalence rate of 15% is documented and this is far less than that of 75% in united kingdom with unmet need for family planning of 2% and fertility rate of 1.7%(1-3). Different methods of contraception are in use today and each method is undergoing development to provide a safer, more effective, acceptable and affordable means of contraception aimed at bringing down this high fertility rate(4).

The progestogen only injectable contraceptives are one of the most successful means of contraception in the world today. Several reports have documented that they are the third most commonly used contraceptive method in the developing world(4,5). It is the most commonly used contraceptive in different parts of Nigeria(5-9).

The two main progesterone only injectable contraceptives are the depot medroxyprogesterone acetate (DMPA) and norethisteroneenantate (NET-EN). DMPA is the most widely used probably because it has a longer duration of action and thus a lesser frequency of administration(7,9-11). It was developed by the Upjohn company in 1954 for the treatment of

endometriosis and habitual abortion but was noticed to cause marked delay in return of fertility. This led to its development as a fertility control agent(5). The injectable POIC are given by intramuscular injection: DMPA is given 150mg every 90 days, NET-EN is given 200mg every 60 days.

POIC primarily act by inhibiting ovulation by interfering with the mid cycle production of luteinising hormone. It also causes morphological changes in the endometrium which renders implantation of the fertilised ovum difficult and alteration in the cervical mucus which renders it impervious to spermatozoa(9-11).

With good compliance, their efficacy increases and the absence of estrogen makes it beneficial to breast feeding mothers(7). The minimal service provider user attention, low Pearl index, availability, simple storage and non contraceptive benefits makes it suitable in the developing countries(1,5,7,10,11).

The non contraceptive benefits include reduction of menstrual cycle disorders such as dysmenorrhoea, polymenorrhoea, and pre menstrual pain. It causes reduction in growth of fibroids, decrease incidence of ectopic pregnancy, palliation of symptoms of endometriosis, help protect against endometrial cancer, symptomatic pelvic inflammatory disease and iron deficiency anaemia. POIC are used in the treatment of pubertal disorders. It is an ideal contraceptive for sicklers and epileptics as it prevents sickling of cells thereby reducing sickling crises and frequency of seizures(1,5,10).

The commonest adverse effects reported by users is irregular vaginal bleeding followed by secondary amenorrhoea(9). To overcome these complications, the combination injectable contraceptives containing 25mg of medroxyprogesterone acetate and 5 mg of oestradiol cypionate were developed. These are however given monthly and has been shown to have better menstrual bleeding profile than the POIC but are not yet readily available in our enviroment(9,12).

Other unwanted effects include cardiovascular disorders (like cardiovascular accident, venous thromboembolism), weight gain/weight loss, headache, dizziness, abdominal bloating and discomfort, breast discomfort, mood changes, reduced libido, loss of bone density, metabolic disorders (like diabetes mellitus) and delay in return of fertility following use(13,14).

POIC still appear fairly commonly used in our environment for contraception, it is therefore important to review the pattern of its acceptance, effectiveness, safety profile and continuation rate as this will help in strategising counselling and improving family planning practice in our institution.

## MATERIALS AND METHODS

This was a 10-year retrospective study of clients who accepted and used POIC at the family planning clinic of the University of Port Harcourt Teaching Hospital between 1st January 2004 and 31st December 2013. Ethical clearance 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 200mg of norethisteroneenanthate (NET-EN) or 150mg of depo-medroxyprogesterone acetate (DMPA) is given into the gluteal or deltoid muscle within the first seven 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 and observations were done after every eight weeks for those receiving NET-EN and 12 weeks for those receiving DMPA. 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 clientswho accepted and used NET-EN and DMPA within the study period were retrieved from the records section of the UPTH family planning clinic and their dataincluding 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 analysed using SPSS for windows 19.0 version and expressed in figures and percentages and presented in tables.

## RESULTS

During the study period, a total of 3481 women accepted and used modern contraceptive methods at the family planning clinic of the university of Port Harcourt Teaching hospital. Of these 1119 (32.15%) clients used intrauterine device (IUD), making it the most commonly accepted contraceptive. One thousand and seventy-five clients usedthe progestogen- only injectable contraceptive method, giving an uptake rate 30.9%, 552 (15.9%) used implants, 549 (15.8%) used oral contraceptive pills while 184 (5.3%) clients had bilateral tubal ligation. Those who collected condoms and other barrier methods were excluded because they did not return for follow up and their usage for contraception not confirmed.

Out of the 1075 clients who accepted POIC, 670 (63.0%)used DMPA while 398 (37.0%) used NET-EN. Of these, 614 (57.1%) clients used it for child spacing while 461(42.9%) used it forterminal contraception.

The age range of acceptorsof POIC was 19-51 years with a mean age of 34.24 ± 3.8 years. Four hundred and four (37.58%) were in the 30-34 years range which was the most frequent age group. Only 2 (0.5%) were aged less than 20 years while 81 (7.5%) were 40 years and above. All (100%) the clients were married and parous with a parity range of 1-12. While 1052 (98.0%) clients were Christians, only 23 (2.1%) were Muslims. The socio-demographic characteristics of the acceptors are shown in table 1.

Table 2 shows the yearly distribution of acceptors of POIC. One hundred and eighty six (17.3%) used it in 2004, increasing to 234 (21.6%) in 2005 but the patronage declined to 57(5.3%) in 2006 and subsequently to 41(3.8%) women in 2013.

Eight hundred and fifty six (79.6%) were lost to follow up while 57 voluntarily discontinued the POIC giving a discontinuation rate of 5.3%. The reasons for discontinuation were desire for pregnancy, intolerable side effects and method switch.

The source of information for the family planning clinic services was mostly from clinic personnel (67.3%), two hundred and twenty women (20.5%) got information from friends and relatives, mass media contributed only 5.80% while the source of information was unspecified in 6.4% of the clients.

There were several side effects totaling 1269 episodes among users of POIC during the study period as shown in table 3. Secondary amenorrhea was the commonest complication occurring in 781 (72.3%) clients followed by irregular menses which occurred in 268 (25.0%) women while the most common non-menstrual side effect was weightgain in 158 (14.7%) acceptors and the least common side effect was palpitation and breast discomfort in 0.10% each.

There was no unintended pregnancy among users of progestogen only injectable contraceptive during the study period giving a pearl index of zero.

**Table 1**
*Socio-demographic Characteristics of Acceptors*

| AGE (YEARS) | DMPA | NET-EN | TOTAL (Percentage) |
|---|---|---|---|
| <20 | 0 | 2 | 20.2% |
| 20-24 | 30 | 19 | 49 4.6% |
| 25-29 | 174 | 121 | 295 27.4% |
| 30-34 | 260 | 144 | 404 37.6% |
| 35-39 | 162 | 82 | 244 22.7% |
| >40 | 51 | 30 | 81 7.5% |
| Grand total | 677 | 398 | 1075 100% |
| Educational Status | | | |
| No formal education | 4 | 5 | 9 0.8% |
| Primary | 0 | 23 | 63 5.9% |
| Secondary | 248 | 123 | 371 34.5% |
| Tertiary | 324 | 229 | 553 51.4% |
| Not stated | 61 | 18 | 79 7.3% |
| Grand total | 677 | 398 | 1075 100% |
| Occupation | | | |
| Civil Servants | 244 | 159 | 403 37.5% |
| Trader | 229 | 125 | 354 32.9% |
| House Wife | 122 | 56 | 178 16.6% |
| Students | 36 | 29 | 65 6.0% |
| Artisans | 40 | 25 | 65 6.1% |
| Farmers | 6 | 4 | 10 0.9% |
| Grand total | 677 | 398 | 1075 100% |
| Parity Distribution | 1 | 37 | 40 77 7.2% |
| 2-4 | 449 | 259 | 708 65.9% |
| 5-9 | 187 | 99 | 286 26.6% |
| >10 | 4 | 0 | 4 0.4% |
| Grand total | 677 | 398 | 1075 100.% |

**Table 2**
*Yearly distribution of POIC acceptors*

| | Method of contraception | | |
|---|---|---|---|
| Years | DMPA | NET-EN | Total (percentage) |
| 2004 | 93 | 93 | 186 (17.3%) |
| 2005 | 143 | 89 | 232 (21.6%) |
| 2006 | 29 | 28 | 57 (5.3%) |
| 2007 | 86 | 47 | 133 (12.4%) |
| 2008 | 80 | 58 | 138 (12.8%) |
| 2009 | 69 | 29 | 98 (9.1%) |
| 2010 | 86 | 24 | 110 (10.2%) |
| 2011 | 29 | 14 | 43 (4.0%) |
| 2012 | 24 | 13 | 37 (3.4%) |
| 2013 | 38 | 3 | 41 (3.8%) |
| Grand total | 677 | 398 | 1075 (100%) |

**Table 3**
*Complications of progestogen only injectable contraceptives*

| Complications | DMPA | NET-EN | Total (Percentage) |
|---|---|---|---|
| Secondary amenorrhoea | 503 | 278 | 78161.5% |
| Weight gain | 93 | 65 | 15812.5% |
| Hypertension | 11 | 10 | 211.6% |
| Irregular menses | 167 | 101 | 268 21.1% |
| Headache | 8 | 6 | 14 1.1% |
| Reduced libido | 3 | 1 | 4 0.3% |
| Lower abdominal pain | 9 | 6 | 15 1.2% |
| Chest Pain | 4 | 0 | 4 0.3% |
| | 0 | | |
| Palpitation | 10. | 0 | 1 0.1% |
| Breast discomfort | | 1 | 1 0.1% |
| Diabetes mellitus | 2 | 0 | 2 0.2% |
| Grand total | 801 | 468 | 1269 100.% |

## DISCUSION

The progestogen-only injectable contraceptives (POIC) are among the most commonly used contraceptives in Port Harcourt(6,9), and second most commonly accepted method of contraception in this study, only next to the intra uterine device.

The 30.9% uptake rate of POIC in this study is higher than the 7.9% reported from Ibadan, South-western Nigeria(15) and 21.9% reported from Jos, North-central Nigeria(16) but much lower than the 71.8% and 50.7% prevalence respectively noted in Aba, South-eastern Nigeria(7) and Zaria(17) North-western Nigeria.

The differences in the regional prevalence rates may be due to the timing and duration of the studies, cultural and religious beliefs, individual clients perception of the contraceptive methods and providers bias.

There appears to be a downward trend in the acceptance and use of POIC from 2006. This is not surprising because of the introduction of subdermal implants in our centre same year with increasing number of our women preferring and accepting the implants(18) probably because of less frequent follow up visits.

Compared to the two-monthly norethisteroneenanthate (NET-EN) injections, our client have continued to prefer the three-monthly depo-medroxyprogesterone acetate (DMPA) injections in keeping with previous reports from Port Harcourt (9) and other parts of Nigeria (10). Again the tendency for women in our environment to use the DMPA may be due to the reduced frequency of

visits relative NET-EN users, as frequent appointment may be perceived economic loss from transportation and man hours.

Up to 42.9% of the acceptors of POIC used it for terminal fertility control, similar to results of earlier studies(9,11). Again this is not surprising in our environment where bilateral tubal ligation is not widely accepted for permanent contraception(6) due also to cultural and religious beliefs.

Secondary amenorrhoea was the commonest side effect noted, occurring in 72.3% of our clients. This is consistent with results of other studies(9,11) and may be as a result of endometrial atrophy associated with prolonged use of POIC. Menstrual abnormalities have been cited in several studies as one of the commonest reasons for discontinuation (9,12).

The most common non-menstrual side effect in this series is weight gain reported in 14.7% of POIC acceptors at variance with earlier reports,(1,9). The relatively high reported weight gain in this study may again be due to the timing and duration of the study period, relatively large number of the study population and the relative improvement in the socio-economic condition in Nigeria during the study period. However, weight gain following POIC use has remained controversial as this has not been confirmed with 10% significant cut off statistically(19,20). The apparent weight gain may also be due to age related increase in weight and better nutrition during the period.

Quite worrisome was the 79.6% of the clients lost to follow up which needs to be found out in subsequent studies. It is possible that some of would have relocated from Port Harcourt to other cities and continued with the method there. It is also possible that some sought the service in nearby private health facilities as most private hospitals provide the progestogen only injectable contraceptive services in Port Harcourt while some would have had method switch elsewhere. However only 5.3% of the clients discontinued POIC voluntarily due to desire for pregnancy, intolerable side effects and method switch. Clinic personnel contributed the highest source of information about the family planning services in our centre similar to findings in other Nigerian studies(5,9,18). The impact of mass media has remained worrisomely low as reported earlier in other studies(9,18). Concerted efforts must be made to bring this very important means of information dissemination to its responsibility, to reach a greater number of women with unmet needs for contraception and hence improve on our unacceptably national contraceptive prevalence rate of 15%(2).

There was no accidental pregnancy during the study period consistent with results of earlier studies(4,9,10,21) and reflects the high level of effectiveness of this method(9).

In conclusion, progestogen only injectable contraceptives is highly effective, safe and acceptable contraceptive method but with gradually declining usage in Port Harcourt due to the availability of the longer acting subdermal implants.

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