

ORIGINAL ARTICLE

Implanon sub-dermal implant: an emerging method of contraception in Ilorin, Nigeria

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Implanon, a single rod sub-dermal implant is a relatively new contraceptive which offers long term reversible contraception for women. This study seeks to determine the safety, efficacy and acceptor characteristics of Implanon at the family planning clinic of University of Ilorin Teaching Hospital (UIITH), Ilorin, Nigeria. This study involves a retrospective review of 88 clients who used Implanon from January 2007 to December 2011 at the family planning clinic of the UIITH, Ilorin. Of the 2,456 clients who had contraception during the period, 88 had Implanon giving a 3.6% uptake. The mean age of Implanon users in the study was 33.4 years, no teenager used the method and 72 (81.8%) knew about the method from clinic staff. Women with two living children constituted 29 (33%) of the total users, 78(88.6%) users had at least secondary education, all except one client were married and religion did not influence its use. Twenty two (25%) users had side effects, the commonest being menstrual irregularity in 13(59%) of the participants. Discontinuation rate was 26.1% and the commonest reason for discontinuation was the desire to get pregnant 8(35%). The Pearl Index for Implanon in the study was 0. Implanon is an effective long term hormonal contraceptive appropriate in a wide range of women with tolerable side effect profile but is currently underutilised. Wider publicity, education and access are needed to improve client uptake..

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INTRODUCTION

Contraception has been used in one form or another for thousands of years but the 20th century ushered in the era of modern family planning services (Okpere 2007). There are a wide range of contraceptives; Implanon was introduced as a user independent, long term hormonal contraceptive with minimal side effects. Marketing of Implanon was started in 1998 (Association of reproductive health professionals, 2008); it is a single 4 cm long 2 mm wide (Okpere, 2007; Burkman, 2007) rod with an ethylene vinyl acetate (EVA) copolymer core containing 68 mg etonogestrel (Okpere, 2007). The rate of release in the early weeks of insertion is 60-70 µg per day (Affandi *et al.*, 1999), it decreases to about 25-30 µg per day by the end of third year (Organon, 2006) but

25-30 µg per day of etonogestrel is needed to suppress ovulation (Funk *et al.*, 2005). The onset of contraception is within 24 hrs of insertion, the cumulative failure rate is low (Ladipo *et al.*, 2005) and the Pearl index is 0 (Affandi *et al.*, 1999, Funk *et al.*, 2005).

The mechanism of action involves thickening of cervical mucus, ovulation suppression and suppression of estradiol – induced cyclic maturation of the endometrium (Okpere, 2007, Ladipo *et al.*, 2005). The rod is usually inserted in the non-dominant upper arm using the trocar; its insertion and removal are quicker compared to Norplant and its mean time for insertion is 1.1 minutes and 2.6 minutes for the removal (Mascarenhas, 1998).

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Implants can be a good choice for adolescent, women with medical disorders like hypertension or diabetes, anemia, endometriosis or those breast-feeding because progestogen only contraceptive

like implanon does not increase the cardiovascular risks in healthy young women (MerkiFed, 2008). Its side effects include menstrual abnormalities, emotional lability, weight increase, depression and acne but with a rapid return of fertility when it is removed (Funk *et al.*, 2005, Sergent *et al.*, 2004). It is relatively new compared to other earlier methods in this centre and thus, it is important to evaluate its performance profile. This study therefore seeks to determine the safety, efficacy, acceptor characteristics of Implanon at the family planning clinic of University of Ilorin Teaching Hospital (UITH), Ilorin, Nigeria

MATERIALS AND METHODS

Setting

The study was conducted at the Family Planning Clinic of University of Ilorin Teaching Hospital, located in Ilorin, Kwara State of Nigeria. It is a tertiary centre that receives clients from Kwara State and the neighboring states of Kogi, Oyo, Osun and Niger states. The family planning clinic is responsible for providing contraceptive services to clients who present on their own or are referred for such services. Implanon was introduced into the range of services at this centre in 2007. The procedure for Implanon insertion involves extensive pre- and post-insertion counseling as well as further counseling during subsequent clinic visits.

Study design and population

This descriptive retrospective study consisted of all the 88 clients who received Implanon subdermal implant as the mode of contraception out of the total 2,456 clients who had contraception at the family planning clinic of UITH Ilorin, from January 2007 to December 2011.

Data collection procedure and analysis

All the qualified clients based on the inclusion criteria were identified from the family planning clinic database, their records were retrieved and relevant data extracted. Data of interest included age, parity, level of education, marital status, religion, number of children alive, source of information about implanon, side effects experienced, number that discontinued and the reasons for discontinuation. Collected data were presented as proportion.

RESULTS

During the study period, there were 2,456 clients who visited the University of Ilorin Teaching Hospital for contraception; out of which 88 opted for Implanon subdermal implant giving a prevalence of 3.6%. From Table 1, the mean age of implanon users was 33.4 years with a range of 20-49 years. Majority (42.1%) of the women who used Implanon sub-dermal implant were within the 30-34 years group. Women with two living children constituted 33% of the users; 1(1.1%) had none, 6 (6.8%) had one, 15(17.1%) had three, 28(31.8%) had four and 9(10.2%) had five or more children

Table 1: Socio-demographic characteristics of Implanon users

Variables	Distribution, n(%)
Age	
20-24	3(3.4%)
25-29	17(19.3%)
30-34	37(42.1%)
35-39	17(19.3%)
40-44	11(12.5%)
45-49	3(3.4%)
Number of children alive	
0	1(1.1%)
1	6(6.8%)
2	29(33.0%)
3	15(17.1%)
4	28(31.8%)
≥5	9(10.2%)
Level of education	
None	1(1.1%)
Primary	4(4.6%)
Secondary	20(22.7%)
Tertiary	58(65.9%)
Not stated	5(5.7%)
Religion	
Islam	41(46.6%)
Christianity	46(52.3%)
Not stated	1(1.1%)
Marital status	
Married	87(98.9%)
Single	1(1.1%)

alive. Majority 78(88.6%) of the clients had attained at least secondary education, 4(4.6%) had primary education, 1(1.1%) had no formal education while the educational status of 5(5.7%) were not stated. All the clients except one were married 87(98.9%); Christians constituted 52.3% of users and 46.6% were Muslims.

As shown in Table 2, most (81.1%) of the studied clients had information about Implanon from the Family Planning Clinic personnel; 8% had their information from friends and or relatives; 2.3% each had their information from poster and public campaigns. Only about 1% of the clients traced their source of information to Television programmes (Table 2).

Table 2: Source of information about Implanon

Source	Distribution, n(%)
Clinic personnel	72(81.8%)
Radio	7(8.0%)
Friend/relative	4(4.5%)
Public campaign	2(2.3%)
Posters	2(2.3%)
TV	1(1.1%)

From the study in Table 3, 22 of the clients representing 25% reported side effects following administration of Implanon. The commonest side effect reported was menstrual irregularity (59%), followed by weight gain and amenorrhoea (9% each). From Table 4, 23 out of 88 clients (26.1%) discontinued the Implanon during the study period. Out of this

Table 3: Side effects profile of Implanon

Side effect	Distribution, n(%)
Menstrual irregularity	13(59.0%)
Weight gain	2(9.0%)
Amenorrhoea	2(9.0%)
Abdominal bloating	1(4.6%)
Headache	1(4.6%)
Menstrual problem with Headache	1(4.6%)
Mood changes	1(4.6%)
Breast pain	1(4.6%)

number, 35% discontinued because of desire to get pregnant, 26.1% discontinued it due to menstrual irregularity while 13% discontinued because of weight gain.

Table 4: Reason for discontinuing Implanon

Reason	Distribution, n(%)
Desire for pregnancy	8(35.0%)
Menstrual irregularity	6(26.1%)
Weight gain	3(13.0%)
Reason not stated	2(8.7%)
Amenorrhoea	1(4.3%)
Abdominal bloating	1(4.3%)
Mood changes	1(4.3%)
Bone pain	1(4.3%)

DISCUSSION

In this study, 3.6% of women using contraceptive methods in this facility used Implanon. This was higher compared to the report from the UK where 2% of contraceptive users used implanon (Monga *et al.*, 2011). Even though the reason for the observed higher value was not clear from this study, it may be due in part to the fact that the family planning personnel had direct contact with the clients who either visited the clinic at will or were referred as such were able to convince them. It is also possible for women with unmet need to readily accept the new contraceptives due to its campaigns of relatively minimal side effect with ease of usage.

Despite the fact that implanon has been found to be appropriate for teenagers (Clerk *et al.* 2006), no teenager or adolescent made use of Implanon during the study period. This showed the limited patronage of contraceptives by adolescents in this society and Africa at large. Societal norms in developing countries which invariably shuns on adolescent engagement in sexual activity and consequently neglecting the obvious widespread of unprotected sexual activity among adolescents with attendant consequences of teenage pregnancies should be addressed.

Most of the acceptors of Implanon contraception

in this study were educated with 88.6% having at least secondary education. Educated clients could be better informed about the needs for contraceptives vis-à-vis the side effects and ease of usage of the various available methods. A strong association has been reported from city slums in Kenya between women empowerment and choice of family planning as it enables them to have a say in fertility preference, use and choice of family planning methods (Okech *et al.*, 2011). Most of the acceptors of Implanon contraception were married (98.9%) further emphasizing the existence of cultural and attitudinal restriction on single women with regards to contraceptive uptake. Mekonnen *et al.*, (2011) reported from south central Ethiopia that married women with at least primary level of education were more likely to embrace contraception.

In this study, 25% of the users had side effects; this was lower than the 50% reported by Sergent *et al.*, (2004). The commonest side effect reported by users was menstrual irregularities (59%); this is similar to reports by Aisien *et al.*, (2010), who reported menstrual abnormalities as the major side effect reported by Implanon users in Benin City, Nigeria. The two commonest reasons for discontinuation of Implanon were the desire to get pregnant (35%) and menstrual disturbance (26.1%) respectively. However, most other studies reported menstrual abnormalities as the leading cause of discontinuation (Funk *et al.*, 2005, Sergent *et al.*, 2004, Lakha *et al.*, 2006). Aisien *et al.*, (2010) reported from Benin City that most of the subjects found menstrual abnormalities tolerable with adequate counseling. The lower rate of discontinuation arising from menstrual complaint in this study may be a reflection of the multiple counseling sessions before and after insertion. The continuation rates for implant use as reported by Ladipo *et al.*, (2005) were higher among those who have had adequate pre-insertion counseling; thus, improvement in counseling practiced will reduce the discontinuation rate.

The lack of post insertion complication reported in this study is in agreement with the study of Mutahir *et al.*, (2008) from Jos, Nigeria. The Pearl index found in this study was 0% as there was no pregnan-

cy among users over the five year period. This is in agreement with reports of Affandi *et al.*, (1999), Funk *et al.*, (2005) and Power *et al.*, (2007).

CONCLUSION

Implanon is a highly effective long term reversible hormonal contraceptive, useful for different groups of women with a tolerable side effect profile. However, its benefits are being underutilized due to low uptake among contraceptive users. Public enlightenment should be vigorously pursued to improve awareness among women about Implanon usage in order to increase its uptake. In addition, wider access to Implanon should be ensured with adequate training of providers to minimize complications at insertion. The role of effective contraception should be emphasized in adolescent health program and public enlightenment to end the exclusion of this vulnerable group from contraception services.

COMPETING INTERESTS

The authors declare that they have no competing interests.

REFERENCES

- Affandi, B., Kerver, T., Geurts, T.B. and Coelingh-Bennink, H.J. (1999). A pilot efficacy study with a single rod contraceptive implant [implanon] in 200 Indonesia women treated for greater than or equal to 4 years. *Contraception* 59:167-174.
- Aisien, A.O. and Enosolease, M.E. (2010). Safety, efficacy and acceptability of implanon- a single rod implantable contraceptive (etonogestrel) in University of Benin Teaching Hospital. *Niger J Clin Pract* 13:331-335.
- Association of Reproductive Health Professionals (2008). History of subdermal contraceptive implants. Association of Reproductive health bulletin.
- Burkman, R.T. (2007). Contraception and family planning. In: Decherney, A.H., Nathan, L., Goodwin, T.M. and Lauren, N. (Editors). *Current Diagnosis and Treatment, Obstetrics and Gynaecology*. 9th edition. McGraw Hill, New York.

- Clerk, N.T. and Ladipo, O.A. (2006). Contraception. In: Agboola, A. [Editor]. Textbook of Obstetrics and Gynaecology for Medical Students. 2nd edition. Heinemann Educational Books [Nig] Plc; Lagos.
- Funk, S., Miller, M.M., Mishell, D.R. Jnr, Archer, D.F., Poindexter, A., Schmidt, J. and Zampaglione, E. for the Implanon US Study Group. (2005). Safety and efficacy of implanon, a single rod implantable contraceptive containing etonogestrel. *Contraception* 71:319-26.
- Ladipo, O.A. and Akinso, S.A. (2005). Contraceptive implants. *Afr J Reprod Health* 9:16-23.
- Lakha, F. and Glasier, F. (2006). Continuation rates of Implanon in the United Kingdom: Data from an observational study in a clinical setting. *Contraception* 74:287-289.
- Mascarenhas, L. (1998). Insertion and removal of implanon. *Contraception* 58(suppl):79S-83S.
- Mekonnen, W. and Worku, A. (2011). Determinants of low family planning use and high unmet need in Butajira District, South Central Ethiopia. *Reprod Health* 8: 37-44.
- MerkiFed, G.S., Imthurn, B. and Seifert, B. (2008). Effects of the progestogen-only contraceptive implant, implanon on cardiovascular risk factors. *Clin Endocrinol [Oxford]* 68:355-360.
- Monga, A. and Dobbs, S. (2011). Fertility control, contraception and abortion. In: Monga, A. and Dobbs, S. (Editors). Gynaecology by Ten Teachers. 19th edition. Book Power, London.
- Mutihir, J.T. and Daru, P.H. (2008). Implanon subdermal implant: a 10 month review of acceptability in Jos, North central Nigeria. *Niger J Clinic Pract.* 11(4):320-323.
- Okech, T.C., Wawire, N.W. and Mbwru, T.K. (2011). Contraceptive use among women of reproductive age in Kenya's slums. *Int J Bus Soc Sci*; 2: 22-43.
- Okpere, E. (2007). Subdermal contraceptive implants [implanon]. In: Okpere, E. [Editor]. Clinical Gynaecology. Revised edition. Mindex Publishing Company Ltd., Benin City.
- Organon [USA] Inc. (2006). Physician insert: Implanon [etonogestrel implant]. Organon [USA] Inc., Roseland.
- Power, J., French, R. and Cowen, F. (2007). Subdermal implantable contraceptives versus other forms of reversible contraceptives or other implants as effective methods of preventing pregnancy. *Conchrane Database Syst Rev* 18:CD001326.
- Sergent, F., Clamegeran, C., Bastard, A.M., Verspyak, E. and Marpeau, L. (2004). Acceptability of etonogestrel-containing contraceptive implant [Implanon]. *J Gynecol Obstet Biol Reprod* 3:407-415.



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