Nigerian Journal of Clinical Practice
March 2010 Vol 13(1):28-31

ONE-YEAR EXPERIENCE WITH IMPLANON SUB-DERMAL IMPLANTS IN JOS, NIGERIA

JT Mutihir, DD Nyango
Department of Obstetrics and Gynaecology, Jos University Teaching Hospital, Jos, Plateau State, Nigeria

ABSTRACT

Objective: To determine Implanon acceptance, the group of women accepting it, complications, indications for discontinuation; and report an initial experience with the method.

Methodology: This was a retrospective observational study of Implanon®, a single rod, long acting, reversible subdermal contraceptive implant system, containing the progestin etonogestrel, which was introduced in Jos, Nigeria, in May 2006.

Results: Implanon capsules were accepted by 404 clients constituting 13.4% of acceptors of all contraceptive methods. The average age, parity and number of living children to the acceptors were 32.1 years, 3.6 and 3.3 respectively. About three-quarters (76.0%) of the women had secondary and tertiary education. Seventy-three (18.1%) of the women were taking a modern contraceptive method for the first time. There were 7 removals giving a high continuation rate of 98.3% in the first year. Menstrual disturbance was the commonest (57.1%) indication for removal.

Conclusion: Implanon is an acceptable method of contraception among our women population.

Key Words: Implant, Implanon, sub-dermal, Jos, Nigeria. *(Accepted 19 January 2009)*

INTRODUCTION

Progestin contraceptive methods have been found to be tolerated by many prospective clients for the absence of estrogen effects[1]. Implants (Norplant[R]) have been used in Jos for more than 2 decades as long term hormonal contraceptive methods. They have been found to be effective, safe, reversible, and approved for use in Nigeria[2]. Implanon® is a single rod, long acting and reversible subdermal contraceptive implant system containing the progestin, etonogestrel, and developed by Organon. The rod is made of ethylene vinyl-acetate holds 68 mg of etonogestrel, and meant to provide contraception for 3 years. The rod measures 40 mm in length, 2mm in diameter and is non-biodegradable[3]. Implanon® is the trademark of Organon for etonogestrel. Etonogestrel is the active metabolite of desogestrel and has been used in combined oral contraceptives for many years with established pharmacological effects[3]. Implanon® is suitable for a wide range of women particularly women who want an easy-to-use contraceptive method to postpone a first pregnancy, space pregnancies or stop pregnancies using the reversible long-term contraception on achieving the desired family size[4]. Implanon® may also be useful for women who are not satisfied with other contraceptive methods, or women in whom estrogen is contraindicated. The primary mechanism of action of Implanon is through ovulation inhibition. In addition, it also increases the viscosity of the cervical mucus, thus having a dual contraceptive effect[3]. Ovulation is normally induced at mid-cycle LH surge or peak. During Implanon use, this LH surge is prevented. FSH levels are found to be normal which means that there is still follicular development and therefore normal endogenous estrogen levels[4]. Serum levels sufficient to inhibit ovulation are reached within 8 hours. This means that it is efficacious within the first day of insertion. Implanon provides effective reliable and reversible contraception for a maximum period of 3 years, after which time the implant should be removed. It has proved to be extremely reliable. The exceptional efficacy has been attributable mainly to ovulation inhibition[3]. Women want methods of contraception that are effective, safe, convenient and do not interfere with sexual life[5]. The acceptability of hormonal contraception depends mainly upon the level of subjective side effects and the effect on vaginal bleeding among others[4]. The major advantages of implants are their effectiveness, convenience, safety, long-term contraceptive protection that commence within 24 hours of insertion and return of fertility almost immediately after removal[6-9].

Implanon is inserted within the first 5 days of a woman's natural cycle, day 1 being the first day of her menstrual bleeding[5]. When changing from a

Correspondence: Dr J T Mutihir
E-Mail:jtmutihir01@yahoo.co.uk

combined oral contraceptive (COC), it should be inserted preferably a day after the last active tablet of the COC, but at least on the day following the usual tablet-free interval or last placebo tablet of the COC. When changing from a progestin-only method, it may be inserted any day the woman is switching from the pill. If she is switching from another implant, it should be inserted on the day of its removal. If switching from an injectable, it should be inserted when the next injection is due. Following a first trimester abortion, it should be done immediately. If this is following childbirth or a second trimester abortion, it should be on day 21-28 after delivery or second trimester abortion[10]. Regional Implanon® introduction for medical professionals was organised in the family planning unit of Jos University Teaching Hospital, Nigeria in May 2006. The family planning unit is manned by 5 trained nursing staff and supervised by a consultant Obstetrician/Gynaecologist. The unit is a type-A facility, offering all forms of modern contraception. The unit also provides Jadelle, the two-rod contraceptive implant. All contraceptive methods are sourced from the Federal Ministry of Health, Abuja, and the implants cost patients two thousand naira ($17) a set. Implants are the most expensive of all the contraceptive methods in the centre including the permanent forms. Counselling is offered and informed consent is obtained prior to insertion of the implant. Additional contraceptive choices are available in the clinic and this helps couples to find the contraceptive method that best suits their wishes and preferences.

The objectives of the study were to determine the acceptance of Implanon, the group of women accepting it, the one-year continuation rate; and to report our initial experience with the method.

CLIENTS AND METHODS

This was a retrospective review of all clients that accepted Implanon contraceptive method and other modern contraceptive methods between May 2006 and April 2007 (12 months) in Jos University Teaching Hospital, North-Central Nigeria. Socio-demographic factors, removals, indications for removal, insertion and post-insertion complications were collated and evaluated. Analysis was done using simple percentages.

RESULTS

Three thousand and fifteen (3,015) clients accepted all contraceptive methods in the clinic within the study period and out of these, 404 women accepted Implanon, constituting 13.4%. The age of the women ranged between 19 and 47 years, with an average of 32.1 years. The parity was from 0 to 11 with the average of 3.6. At the time of accepting the Implanon, the women had between 0 and 8 living children and an average of 3.3 children. The women were of body weight of between 40 and 122 kg with an average of 62.8 kg. One hundred and eleven, (27.8%) of the women were above 70 kg in weight, Table 1. About three-quarters (76.0%) of the acceptors of the method had secondary and tertiary education. Non-literate women constituted only 2.2%, Table 2. Two hundred and twenty eight (56.4%) of the women desired more children on discontinuation of the method, 170(42.1%) would not want more children, while 6(1.5%) were undecided.

There were 7 removals giving a continuation rate of 98.3% in the first year. The indications for removal included side effects, 6 (menstrual disorders 4, acne 1, headache 1), husband's disapproval 2, and pregnancy before insertion of the implant 2. Menstrual disorders constituted over 50 percent of the indication for removal in the 12 months of use. Menstrual disturbance was the commonest indication (57.1%) for removal, Table 3.

Table 1: **Parameters of Clients that Accepted Implanon in Jos University Teaching Hospital during the Study Period.**

Parameter	Range	Means
1. Age in years	19-47	32.1
2. Parity	0-11	3.6
3. Number of living children	0-8	3.3
4. Weight in Kilogrammes	40-122	62.8

Table 2: **Literacy Level of the Women that Accepted Implanon (N = 404).**

Literacy Level	Number of Clients (%)
Non-literate	9 (2.2)
Primary	77 (19.1)
Secondary	158 (39.1)
Tertiary	149 (36.9)
Not stated	11 (2.7)

Table 3:**The Indications for Removal of the Implants within the Period (N = 7).**

Indication for Removal	Number (%)
Menstrual irregularities	4 (57.1)
Pregnant before insertion	2 (28.6)
Husband's disapproval	2 (14.3)
Acne	1 (14.3)
Headaches	1 (14.3)
Total	**10 (142.9)***

(*Two clients had more than one reason for removal of the implant)

DISCUSSION

Users of Implanon constituted about 13% of the acceptors of contraception within the study period. This is higher than the 5% documented for Norplant in the same centre two years previously, and falls within the range of less than 20% of users of contraceptives in Nigeria[11]. The acceptance of implants for contraception is rising. This may be due to increased awareness among the clients about the method. Cost on the other hand, it was observed, made the commodity inaccessible to all desiring patients. The most common side effect of implants is the disruption of the menstrual cycle[12]. This was the same in the study accounting for over 50% of the indications for discontinuation/removal of the implants. It is also known that menstrual disturbance also occurs in untreated women of reproductive age with amenorrhoea occurring in about 1% of women, infrequent bleeding in about 8% and frequent and prolonged bleeding in less than 0.1%[13]. The use of Implanon is supported in any client who knows what to expect from it in terms of efficacy, convenience and limitations like irregular menstrual bleeding. Counselling of the clients about the bleeding disorders helps to reduce the discontinuation rate. About one-fifth of the women were taking a contraceptive method for the first time while four-fifths of them had been on one method of contraception or the other and were only switching over to Implanon sub-dermal implants. The implants thus offer women an additional 'contraceptive method mix' to choose from for the new patients and the opportunity to change method for patients that had been on other modern methods of contraception. A little over 50% percent of the women were using the method for the limitation of family size. As many as 42% of the clients would not want any more children but opted for Implanon instead of a permanent method. This means that their family size had been reached but who were still considering sterilization or permanent form of contraception

The socio-demographic characteristics of Implanon users revealed that they were young with average age of 32.1 years. They had an average parity of 3.6, while the average number of living children was 3.3. These values are lower than the 6.0 and 4.4 for Norplant acceptors for parity and number of living children respectively in a previous study[14]. Some of the clients were yet to have a child (parity zero). About 56.4% had the desire for more children after the removal of the implants. All the women were married and in stable family relationships. Majority (76%) of the patients were of tertiary and secondary education. Non-literate women appear to be suspicious of new methods and therefore shunned the method, constituting less than 3% of the acceptors. The average weight of the women was 62.8 kg, and about 27.8% of them were above 70 kg body weight. Because of the reported good Pearl index of Implanon, its insertion was not limited to only women of 70 kg and below as initially applied for Norplant. Weight was not a barrier to offering Implanon to desiring patients in the unit. This is because in a clinical trial of 130 women of body weight above 70 kg for 2-3 years, not a single pregnancy was recorded in that study[5]. The women were however counselled about the possibility of a higher chance of failure in them compared with those of lower body weight. Over three quarters of them had a prior positive history of previous contraceptive use.

Insertion complications like infection, expulsion, bruising and induration did not occur and therefore were not reported. The acceptors of Implanon came from all other users of other contraceptive methods in addition to those that had not used any form of contraception before. Seven clients (1.7%) had the Implanon removed within the study period giving a continuation rate of 98.3% in the 12 months period. That is higher than that reported for Norplant[2]. Prolonged bleeding episodes made up 20% of the cases. This is similar to the 21.7% for Norplant users[14]. Menstrual disturbance, like in other progestogens, was the commonest indication for discontinuation of the method. The two clients that were pregnant before insertion claimed to have seen their menstrual periods, and pregnancy tests done were negative in both of them just prior to insertion of the implant. The clients escaped detection from the pressure of a training session in the facility. Early ultrasound scan dating of the pregnancies on follow-up visit with the complaint of secondary amenorrhoea showed that the pregnancies occurred before the Implanon insertion. We need to be more vigilant concerning client recruitment for insertion. We will have to comply with the insertion within 5 days of menstruation as directed by the manufacturers.

CONCLUSION/ RECOMMENDATIONS

Women are accepting this new method of contraception in this centre. The initial prospect is good for the clients and providers alike. The method appears to be a popular and promising long term sub-dermal of contraceptive method amongst our women. Continuation rate was high and side effects were few. There is the need to begin to think of supply logistics and sustainability if the method is to continue to enjoy the patronage of prospective users. Women of reproductive age wishing to prevent pregnancy have a right to safe, effective and well-tolerated method of contraception. This may just be one of such a method for many clients. The following are pertinent issues to recommend for improved services within the country.

Close monitoring and follow-up of these clients over a longer period to determine client satisfaction with the method, side effects, safety and effectiveness of Implanon among Nigerian women. Collaborative studies should be conducted across the country to determine the acceptability of Implanon among the different ethnic groups. Structures for sustainability should be put in place supported by legislation and strong government policy to make the Implanon available to clients at all times. Barriers to accessibility such as cost should be addressed in order for all desiring clients to benefit from the method.

ACKNOWLEDGEMENT

I wish to thank all involved in making this success story. I am particularly grateful to the head of department for creating a conducive environment in the fertility regulation unit to attain this level of success. I am also thankful to all those who participated in training the service providers, counselling prospective users, insertion and removal of the implants and record keeping. I remain indebted to the officials of the Federal Ministry of Health for their support.

REFERENCES

1. Organon. Introduction and clinical profile of Implanon. Implanon Product Monograph. N. V. Organon, 2002a; 7-8.

2. **Balough SA, Ladipo OA, Ekwempu CC, Diejomaoh FME, Fakeye O, Otubu JAM.** Three-year experience with Norplant contraceptive implants in Nigeria. British Journal of Family Planning, 1992; 17: 103-107.

3. Organon. Design and Composition of Implanon. Implanon Product Monograph. N. V. Organon, 2005a; 11-13.

4. Organon. Clinical Profile of Implanon. Implanon Product Monograph. N. V. Organon, 2005b; 31-44.

5. Organon. Insertion, localization and removal of Implanon. Implanon Product Monograph. N. V. Organon, 2005c; 47-54.

6. **Ladipo OA. Akinso S.** A Contraceptive Implants. African Journal of Reproductive Health, 2005; 9: 16-23.

7. **Croxatto HB, Makarainen L.** The pharmaco-dynamics and efficacy of Implanon: An overview of the data. Contraception, 1998; 58: 91-97.

8. **Edwards JF, Moore A.** Implanon: A review of Clinical Studies. British Journal of Family Planning, 1999; 24: 3-16.

9. **Croxatto HB.** Progestin Implants for female contraception. Contraception, 2002; 65: 15-19.

10. Organon. Introduction and clinical profile of Implanon. Implanon Product Monograph. N. V. Organon, 2002b; 7-8.

11. EngenderHealth. The future of contraceptive implants in Nigeria. EngenderHealth Activity Brief, Lagos, Nigeria. April, 2002; 1-8.

12. **Mascarenhas L.** Long-acting methods of contraception. British Medical Journal, 1994; 308: 991-992.

13. **Faundes A, Alvarez F, Branche V, Jimenez E, Tejada AS.** Hormonal changes associated with bleeding during low dose progestogen contraception delivered by Norplant subdermal implants. Adv Contraception, 1991; 7: 1-10.

14. **Aisien AO, Sagay AS, Imade GE, Ujay IAO, Nnana OU.** Changes in Menstrual and haematological indices among Norplant Acceptors. Contraception, 2000; 61: 283-286.