Experience with Implanon in Southern Nigeria

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Abstract

Implanon, a single rod long acting reversible implant contraceptive containing 68 mg of etonogestrel is relatively new, and has not been comprehensively evaluated since its introduction at the University of Port Harcourt Teaching Hospital, Port Harcourt, Southern Nigeria. The study aimed at determining the acceptance, efficacy and safety profile of implanon in our centre. This is a cross-sectional retrospective study on whole clients who accepted implanon in UPTH between 1st March 2006 and February 28, 2011. Data on the clients’ socio-demographic characteristics, insertion and post insertion complications were extracted from their case files, entered into Microsoft Excel sheet, analyzed using Epi-Info statistical software. Of the 4,065 acceptors of contraception, 168 had implanon, representing 4.1% of the acceptors. The age range was 20-44 years with a mean age of 32.3 ± 4.2 years. One hundred and sixty-two (96.4%) acceptors were married and multiparous. Up to 64.4% (87) clients who were on previous contraceptive method, changed over to implanon. The discontinuation rate was 5.4%, while failure rate was 0%. Implanon is therefore, highly effective, safe and an acceptable method of contraception in Port Harcourt, Southern Nigeria.

Keywords: Implanon, acceptance, safety, efficacy, Port Harcourt, Southern Nigeria.

INTRODUCTION

Implanon, a progestogen-only subdermal contraceptive implant is a relatively new entrant into the ever growing contraceptive methods available on choice (Implanon Product Monograph N.V Organon 2005).

It was developed by Organon and contains 68mg of etonogestrel (3-Ketodesogestrol) which provides contraception for 3 years by releasing 30 micrograms of etonogesterel into the body system daily (Implanon Product Monograph N.V Organon, 2005).

Generally, progestin contraceptives have been found to be well tolerated by users because of absence of estrogenic side effects (Meckstroth and Darney, 2001). They are convenient, effective and safe (Horacio et al 1999, Funk and Mishell 2005). Norplant is a long term reversible hormonal contraceptive which has been discontinued (Okpani and Enyindah 2003), with the advent of implanon.

Implanon acts by inhibiting ovulation and causing changes in the cervical mucus that makes it difficult for spermatozoa to access the uterine cavity (Meckstroth and Darney 2001, Horacio et al 1999, Design and composition of implanon 2005). It has a long term hormonal contraceptive protection that commences within 24 hours of insertion and return of fertility almost immediately after removal (Croxatto and Makarainen 1998, Edwards and Moore, Clinical profile of implanon 2005, Croxatto 2002). It is made of 40 mm semi-rigid plastic single-rod which is inserted into the medial aspect of the middle third of the non-dominant upper arm. It is inserted within the first five days of a woman’s natural menstrual cycle. Compared with other implants, it is simpler to insert and remove. Failure of this implant, resulting in pregnancy is mainly due to insertion after pregnancy, expulsion and interaction with hepatic enzyme with resultant degradation (Horacio et al, 1999).

With failure rate approaching zero per 100 woman years, it is a very effective contraceptive implant (Meckstroth and Darney 2001, Yildizhas et al 2007, Croxatto 2004, Darney 1994).

The risk of ectopic pregnancy, dysmenorrhea and pelvic inflammatory disease are reduced in comparison with those of women using copper or non-medicated intrauterine contraceptive device (Sivin 2000). The side effects of implanon vary widely from bleeding irregularities such as amenorrhea, infrequent or
prolonged vaginal bleeding to non menstrual adverse
effects such as breast pain, acne, vaginitis, pharyngitis
and mild pain at the insertion site (Edwards and Moore
2008). Adverse effects, especially irregular vaginal
bleeding is a common reason for discontinuation
(Yildizhas et al 2007, Croxatto 2000). Others include
desire for conception, spouse disapproval and weight
gain (Horacio et al 1999, Fakeye 1989). Implanon is a
good and safe contraceptive option in lactating mothers,
adolescents, hypertensive or diabetic clients. It is also
beneficial in case of endometritis and anaemia
Implants have no significant effect on serum lipid profile
(Horacio et al 1999, Adekunle et al 2000, Hohmann and
Creimun 2007).

The minimal service provider and user attention/involvement, low pearl index, high safety profile
and the non-contraceptive benefits of implanon have
assured maximum client satisfaction, acceptance and
continuation with implanon.

Port Harcourt, the Rivers state capital has been the
nerve centre for oil and gas prospecting and refining
activities in Nigeria for over 52 years and as such densely
populated. The UPTH draws its clients from a cross
section of multi-ethnic and indigenous population who
reside in Port Harcourt and its extended catchment areas
that traverse the difficult terrain of the Niger Delta area of
Nigeria.

Implanon was introduced into the family planning
clinic of UPTH in March 2006, immediately following
the regional Implanon introduction meeting for family planning physicians in Ibadan, South-West
Nigeria.

This cross-sectional retrospective study aims at
documenting our experience with the use of implanon in
the first five years of its use as a comprehensive study in
Port Harcourt, Southern Nigeria, and at determining the
acceptance, efficacy and safety of implanon in the study
population.

METHODS

The family planning clinic of the UPTH established in
1986 is one of the largest family planning clinics in the oil
rich Niger Delta area of Nigeria and the only centre in
Rivers state where implant contraception can be
accessed by clients. It is headed by a consultant
Gynaecologist, supported by resident Doctors and nurses
in the Obstetric and Gynaecology department of the
hospital. Clients are sourced from the post-natal clinic,
Out-patient clinic and the general public.

The clients are adequately counseled by family
planning nurse practitioners and physicians in
accordance with the family planning protocol. Baseline
medical history is taken from the clients and general
physical and systemic examinations performed and
informed consent obtained.

Insertion and removal of implanon are carried out in
strict compliance with the manufacturer’s protocol for
implanon insertion. Exclusion criteria are pregnancy,
obesity and severe systemic illness.

In the absence of complications, post-insertion follow
up visits are at the first four weeks, at three and six
months respectively, then annually. Clients are counseled
to report to the clinic if complications arise and all
complaints are documented. At each follow up visit, the
weight and blood pressure of the client are recorded and
complications managed as appropriate. A client is
considered lost to follow up if she defaulted for more than
six months.

The case files of all clients who accepted implanon
contraception between 1st March 2006 when implanon
was introduced in UPTH, and 28 February 2011 were all
intact and retrieved from the UPTH family planning
records section. Data collected from the files included
clients age, parity, educational status, marital status, and
source of information, change from other contraceptive
method to implanon, side effects, insertion/removal
complications, and reasons for removal/discontinuation.

The collected data were fed into a spread sheet and
analyzed using Microsoft-Excel and Epi- info software
and presented as percentages, means and standard
deviations.

RESULTS

During the study period, 4065 clients accepted
contraceptive methods, of these, 168 clients used
implanon, representing 4.1% of acceptors.

Table 1 shows the socio-demographic characteristics
of acceptors. The age range of the clients was 20-44
years with a mean age of 32.3 ±1.2 years. Multiparous
clients constituted 94.6%. One hundred and twenty three
clients, representing 95.3% were married and most 126
(97.7%) have at least a secondary education.

Table 2 illustrates the distribution of total contraceptive
acceptors against implanon users in the respective
years. While the absolute number of implanon users in
the first year of introduction of implanon in the centre was
3 (representing 0.3% of total contraceptive acceptors)
there was astronomical upsurge in acceptance; 37 clients
(2.7% of acceptors) in the 2nd year and 89 (11.1% of
acceptors) in the 3rd year, thereafter, there was a sharp
decline; 23 clients (5.6% of acceptors) in the 4th year and
16 (4.1% acceptors) in the fifth year.

Important sources of information were clinic
personnel for 69% and friends/relatives 17.8% of the
clients. Other sources are as shown in table 3.

Fifteen clients had unwanted side effects: spotting
60%, menorrhagia 13.3%, and intermenstrual bleeding
13.3% were the most prevalent side effects as shown in

Ojule et al. 711
### Table 1. Socio-demographic characteristics of implanon acceptors

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>Percentage (%)</th>
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<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 24</td>
<td>8</td>
<td>4.8</td>
</tr>
<tr>
<td>25 - 29</td>
<td>31</td>
<td>18.4</td>
</tr>
<tr>
<td>30 – 34</td>
<td>77</td>
<td>45.8</td>
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<tr>
<td>35 – 39</td>
<td>41</td>
<td>24.5</td>
</tr>
<tr>
<td>≥ 40</td>
<td>11</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>168</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Parity</strong></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Nulliparous</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Primiparous</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Multiparous</td>
<td>162</td>
<td>96.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>168</td>
<td>100</td>
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<table>
<thead>
<tr>
<th><strong>Educational status</strong></th>
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<tbody>
<tr>
<td>Primary</td>
<td>7</td>
<td>4.2</td>
</tr>
<tr>
<td>Secondary</td>
<td>33</td>
<td>19.6</td>
</tr>
<tr>
<td>Tertiary</td>
<td>128</td>
<td>76.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>168</td>
<td>100</td>
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</tbody>
</table>

### Table 2. Yearly distribution of contraceptive acceptors and Implanon users

<table>
<thead>
<tr>
<th>Year</th>
<th>Total no. of acceptors</th>
<th>No. of implanon users</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 2006 – February 2007</td>
<td>1109 (27.3%)</td>
<td>3 (1.8%)</td>
</tr>
<tr>
<td>March 2007 – February 2008</td>
<td>1348 (33.2%)</td>
<td>37 (22.0%)</td>
</tr>
<tr>
<td>March 2008 – February 2009</td>
<td>801 (19.7%)</td>
<td>89 (53.0%)</td>
</tr>
<tr>
<td>March 2009 – February 2010</td>
<td>413 (10.1%)</td>
<td>23 (13.7%)</td>
</tr>
<tr>
<td>March 2010 – February 2011</td>
<td>394 (9.7%)</td>
<td>16 (9.5%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4065 (100%)</td>
<td>168 (100%)</td>
</tr>
</tbody>
</table>

### Table 3. Source of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic personnel</td>
<td>116</td>
<td>69.0</td>
</tr>
<tr>
<td>Friends/relations</td>
<td>29</td>
<td>17.2</td>
</tr>
<tr>
<td>Electronic media</td>
<td>9</td>
<td>5.4</td>
</tr>
<tr>
<td>Private clinic</td>
<td>8</td>
<td>4.8</td>
</tr>
<tr>
<td>Print media</td>
<td>6</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>168</td>
<td>100</td>
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### Table 4. Side effects of implanon

<table>
<thead>
<tr>
<th>Side effects</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spotting</td>
<td>11</td>
<td>52.4</td>
</tr>
<tr>
<td>Amenorrhea</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
<td>Menorrhagia</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>Intermenstrual bleeding</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>Breast pain</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td>Weight gain</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21</td>
<td>100</td>
</tr>
</tbody>
</table>
DISCUSSION

Implanon users constituted 4.1% of acceptors of contraception in Port Harcourt, South-South Nigeria. This is less than the 13% reported in earlier study in Nnewi, South-East Nigeria (Mutihir and Nyango 2010). The yearly distribution of acceptors of implanon showed progressive increase in the first three years of this review. More importantly, majority of these clients that accepted this contraceptive option made a change from their initial choice. This showed a preference for implanon in keeping with findings of other studies (Horacio et al 1999, Croxatto 2000, Darney 1994, Riney et al 2009). However, there was a sharp decline of implanon users in the subsequent 2 years of the study. This may probably due to overall decline in contraceptive acceptors in our family planning clinic as a result of multiple national industrial actions by health workers in Nigeria, ‘surgery’ for insertion and removal and rising cost of implanon. Implanon was supplied free of charge to our centre at the introductory phase by the manufacturing firm and so was accessed free by the clients, but newer acceptors paid for the commodity at the exhaustion of the initial stock.

The socio-demographic characteristics of implanon users are also in keeping with findings of earlier studies (O’Connor et al 2009; Mutihir and Nyango 2010, Riney et al 2009). Almost all the clients were parous, suggesting that postponing pregnancy rather than spacing was the main contraceptive desire. All the clients had formal education, with 97.7% having at least a secondary education. This apparently made counseling easier.

These favorable socio-demographic characteristics of the clients especially high level of education and parity with need for contraception, pre-acceptance counseling by family planning clinic staff, coupled with ongoing information by the service providers during use must have accounted for the high acceptance level recorded in this study.

Majority of our clients heard of the family planning through clinic personnel/hospital in keeping with the results of earlier studies (Ojule and Macpeppele 2011). The impact of mass media in this study is still rather low as earlier reported in a previous study in our centre (Ojule and Macpeppele 2011). Concerted efforts should therefore be made to intensify publicity through both the electronic and print media in southern Nigeria.

The acceptability of hormonal contraceptives depends mainly on the level of subjective side effects especially irregular vaginal bleeding (Clinical profile of implanon 2005, Yıldızhas et al 2000; Croxatto 2000, Balogun et al 1992; implanon product monograph 2005). Others include safety profile and depth of counseling. Menstrual irregularities were the commonest adverse effects with spotting constituting 60%, the most worrisome complaints. It then means that implanon may not have completely addressed the problem of irregular vaginal bleeding associated with progestogen-only contraceptive. There were no cases of insertion complications such as infection and expulsion at variance with earlier studies elsewhere (implanon product monograph 2005). The indications for discontinuation were desire for conception in 71.4% and menorrhagia in 28.6%. Other indications for removal as found in other studies were husbands disapproval (Fakeye 1989, Ladipo and Akinso 2005) and excessive weight gain.

Significant weight gain was taken as 10% weight gain post insertion while significant rise in blood pressure was taken as diastolic increase of 10mmHg and above or systolic of 20 mmHg or above from the pre-insertion value. Only one case of significant weight gain was recorded in this study.

Implanon has a high safety profile, and amazing excellent contraceptive quality. The Pearl index of implanon in this study is zero per hundred woman years in keeping with findings of other studies (Horacio et al 1999; Yıldızhas et al 2007). Side effects noted were tolerable as only two clients (1.6%) discontinued implanon based on untoward effects.

Implanon may not have answered all the short falls other progestogen-only contraceptives, especially irregular vaginal bleeding, but proven to be a much better contraceptive option.

REFERENCES

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