

IMPLANON IMPLANT CONTRACEPTION AT THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL: A PERIODIC REVIEW

ABSTRACT

Background: Implanon subdermal implant has been in use for contraception in our centre for over a decade; hence we decided to evaluate its usage so as to improve services.

Objectives: To determine the acceptance, efficacy and side effects among users of Implanon in the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt, Nigeria

Methods: It is a 10 year retrospective study of clients who accepted and used Implanon for contraception in the University of Port Harcourt Teaching Hospital, Southern Nigeria. The case files in the family planning clinic were retrieved and information on their biodata, source of information, complications and reason for removal were extracted. Data obtained was filled into a spread sheet, analyzed using statistical package for social sciences (SPSS) version 21.0 and presented in tables of frequencies and percentages.

Results: Of the 3,829 who accepted modern contraception in the period under review, 361 women chose Impanon giving an up take rate of 9.4%. Their mean age was 32.1 ± 7.1 ; most of them were multipara 340(94.2%) with a mean parity of $4. \pm 5.3$ while 346(95.7%) had secondary education and above. Irregular

vaginal bleeding was the major complaint 73(86.9%) while the main reason for removal of the implant was desire for conception 87(48.6%). Pearl index was 0.003.

Conclusion: Implanon is a very effective and safe method of contraception with increasing acceptance in Port Harcourt, southern Nigeria.

Key notes: Implanon, Contraception, Port Harcourt.

Introduction

Contraceptive use helps couples and individuals realize their basic right to decide freely and responsibly, when and how many children to have. The growing use of contraceptive methods have resulted in not only improvements in health-related outcomes such as reduced maternal mortality and infant mortality^{1,2,3} but also improvements in education and economic indices, especially for girls and women^{4,5}. In 2015, West Africa was the sub-continent with the lowest contraceptive prevalence and was among the sub-regions with the highest unmet need for family planning among married or in-union women aged 15 to 49 years.

Generally, implants offer promising opportunity for addressing the high and growing unmet needs for modern contraception especially in sub-Saharan Africa where 1 in 3 women have unmet need for family planning⁶; the highest proportion for any region in the world⁷. Work on subdermal implant started in

43 1966 in New York^{7,8} and was introduced into Nigeria by 1985⁸. The availability
44 of this contraceptive method in sub-Saharan Africa increased the number of
45 family planning options from which the clients makes a suitable choice.

46 Implanon was introduced into the UPTH in the year 2006. It is a long acting
47 reversible contraceptive (LARC) progestogen. Unlike the Jadelle (a progestogen
48 only contraceptive implant that is two capsule acting for 5 years), Implanon is a
49 single silastic capsule of 40mm long and 2mm thick licensed for 3 year use ⁹.
50 It contained 68mg of etonorgestrel and belonged to second generation implant
51 contraceptive. It acts by thickening the cervical mucous, causes hypertrophic
52 changes at endometrial lining and induces anovulation¹⁰⁻¹¹. Studies in Nigeria
53 shows that it is highly effective, safe and widely acceptable¹²⁻¹⁵. More to this is
54 the fact that it has no user dependence, and has minimum requirement for
55 medical follow-up once inserted.

56 In spite of the apparent beautiful advantages, the limitations of possible weight
57 changes, menstrual irregularities, headache and raised blood pressure though
58 occasional, are of concern. Since the 18th century, there has been an explosion
59 in the world's population with Africa bearing the brunt of over population and
60 its consequences⁵. This has stalled development in the region, plugging Africa
61 into poverty and heightening the desire for population control in the region.
62 Fertility control as an option has suffered a setback in sub Saharan Africa,
63 mainly owing to cultural and religious challenges but also due to the fact that
64 little has been done to improve the uptake of the available family planning

services. All these work in cohesion to undermine the several reported benefits of family planning in the region^{8,13}. It is with these challenges in mind that this study was conceived to update our experiences with Implanon implant contraceptive method among clients in a referral centre southern Nigeria. This will afford us a review of Implanon in this center in the past 10years, its use/uptake, hence identifying areas for improvement

Methodology

This is a retrospective descriptive study of client who accepted to use Implanon for contraception at the UPTH family planning clinic between March 1st, 2006 and February 28th, 2016.

At presentation, prospective clients are counseled by family planning nurse practitioners on the various contraceptive methods thereby guiding them to make informed choice of methods suitable for them. Medical history is taken and a clinical examination is performed. A urine analysis is done as well as a pregnant test.

The pregnant respondents, those who are severely hypertensive or diabetic are discouraged from having Implanon inserted. Barrier contraceptives were excluded in this study as there was no recorded evidence of follow up, hence their use for the purpose of contraception was not certain. All folders of client on contraceptive method are usually kept in the family planning record section.

The biodata, source of information, side effects and reasons for implant removal for Clients on Implanon are extracted using a structured proforma and the data entered into SPSS version 21.0 spread sheet for analysis. Descriptive statistics of the data using mean and standard deviation was done and result presented in frequency and percentage tables.

RESULTS

During the study period, a total of 3,829 women accepted and used modern contraceptive methods. Out of this, 361 used Implanon, giving an up take rate of 9.4%. One thousand two hundred and twenty one of this number used intrauterine device (32.0%) and 116(30.3%) used injectable progestogen. Three hundred and fifteen used oral contraceptives (8.2%) and 223(5.8%) had bilateral tubal ligation.

Of the 361 that were on Implanon, 346(95.8%) had at least secondary education, while most of them 340(94.2%) were multipara with a mean age of 32.1±5.9 (table 1). A greater number of acceptors were recorded in the last quarter of the study, table 2. Clinical personnel and friends and relations accounted for most of the source of information 332(91.9%), table 3. Irregular vaginal bleeding was the major complaint 73(86.9%) while weight gain was 6(7.1%), table 4. The main reason for discontinuation of implant was desire to conceive 174(48.6%) and discontinuation due to complications such as vagina

106 bleeding, perceived weight gain and depression accounted for 51(14.2%), table
 107 5. Pearl index was 0.003 from a case of accidental pregnancy during this study.
 108 Implanon use for limiting pregnancy was 142(39.3%) and spacing 219(60.7%)
 109 while only 3(0.8%) of the women were lost to follow up.

110 **Table 1: Socio-demographic characteristics of acceptors of Implanon**

	No.	Percentage(%)
Age (years)		
20-24	19	5.3
25-29	84	23.3
30-34	69	46.8
34-39	72	19.9
40 and above	17	4.7
Total	361	100%
Parity		
Nuliparity	3	0.8
Prim parity	18	5.0
Muilparity	340	94.2
Total	361	100%
Education		
Primary	15	4.2
Secondary	98	27.1
Tetiary	248	18.7
Total	361	100%

111

112 **Table 2: Yearly distribution of Implanon acceptors**

Year	No.	Percentage(%)
March 2006- Feb. 2007	3	0.8
March 2007- Feb. 2008	37	10.3
March 2008- Feb.2009	69	19.1
March 2009- Feb.2010	23	6.4
March 2010- Feb.2011	16	4.4
March 2011- Feb.2012	25	6.9
March 2012- Feb.2013	40	11.1
March 2013- Feb.2014	51	14.1
March 2014- Feb.2015	50	13.9
March 2015- Feb.2016	47	13.0
Total	361	100%

113

114 **Table 3: Sources of information**

Parameter	No.	Percentage(%)
Clinical personnel	243	67.3
Friends and relations	89	24.6
Media	23	6.4
Others	6	1.7
Total	361	100%

115

116 **Table 4: Complications of Implanon**

Side effects	Frequency	Percentage(%)
Spotting	25	29.8
Amenorrhea	21	25.0
Menorrhagia	17	20.2
Intermenstrual bleed	10	11.9
Weight gain	6	7.1
Headache	3	3.6
Depression	2	2.4
Total	84	100%

117

118 **Table 5: Reasons for removal of Implanon**

Reasons	Frequency	Percentage(%)
Desire for pregnancy	174	48.6
Expiration	106	29.6
Complications	51	14.2
Menopause	15	4.2
Clients request	12	3.4
Total	358	100%

119

120

121

Discussion

Implanon, a long acting reversible progestogen only contraceptive, remain a common and effective option of contraception among our women^{16,17}. Its up take rate of 9.4% is forth after intrauterine device, progestogen only injectable contraceptive and jadelle; and is lower than 16.0% uptake rate found in Zaria study¹⁸ apparently because it is new in this centre. However, the increasing acceptance trend noted with this method is not surprising as it matches efficacy with its long acting property. This increasing acceptance trend is also illustrated in the previous work in this centre demonstrating implant as one of the associated factors responsible for the declining trend in the use of progestogen only injectable contraceptives^{19,20,21}.

Most of its users are young women with good education hence ease appreciation of counseling and hence acceptance. Clinical personnel and friends and relations as in most studies, have continue to play a great role introducing implants to clients (91.1%) while the role of the media in this respect has remained worrisomely and abysmally low (6.4%)^{22,23}. The media should realize its role in this all important situation and deliberately make it part of its programme as this will help in improving our low national contraceptive prevalence²⁴.

Irregular vagina bleeding, as have been in almost all previous studies, top the complications associated with this contraceptive in this study (86.9%)^{25,26}. Although this could be very disturbing to the clients, most cases resolve on

144 counseling²⁷ or following medication (consistent result following medications
145 are lacking but all of these devices seem to have best response to non-steroidal
146 anti inflammatory drugs and anti fibrinolytics)²⁸. Combined oral contraceptives
147 is also useful²⁹

148 Weight gain (7.1% in this study) with progestogen only contraceptives has
149 remained variable and hence controversial as there is no statistical
150 confirmation of the 10% significant cut-off mark ^{30,31} We also noted that
151 studies on lipid changes were normal, ^{32,33} hence collaborating the above
152 assertion.

153 Most acceptors of Implanon in this study used it mainly for spacing their
154 children (60.7%) rather than limiting fertility (39.3%), hence their preference for
155 the 3 year life span implant to the longer 5 year type. Though the most
156 common complaint was menstrual disturbances, the common reasons for
157 discontinuing Implanon use were desire for conception (48.6%) and expiration
158 (29.6%). Other reasons such as complications, client request, and menopausal
159 states were also noted for removal of the device. Just like in other medications,
160 many of our people feel that a drug should not be ingested for a long period
161 otherwise it would be “too much” in the system, hence the number that
162 voluntarily requested to remove the implant (in spite of adequate counseling)
163 for no obvious complaint.

The pearl index of Implanon in this study was 0.003 reflecting a high efficacy which is in keeping with most studies^{26,34}. Commendable is the fact that only 3 (0.8%) client were lost to follow up apparently due to adequate counseling.

CONCLUSION

Implanon, a long acting, safe and effective means of contraception with increasing acceptance **profile** as shown in this study is hence cost effective. Training more care providers in this direction as shown by improved uptake of implant contraceptive after training of community health extension workers in Northern Nigeria³⁵ will be a welcome idea towards satisfying a huge unmet-need gap in our contraceptive menu.

Ethical Approval: Ethical approval for the study was obtained from the teaching hospital ethical committee.

References

1. Saifuddin A, Li Q, Liu L, Tsui AO. Maternal deaths averted by contraceptive use: an analysis of 72 countries. *The Lancet* 2012; 380(9837): 111-125.
2. Bhutta, ZA, Das JK, Bahl R, Lawn E, Salam RA, Paul VK, et al. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? *The lancet* 2014; 384:347-370.
3. Shea R, Winter R. Contraception needed to avoid high fertility-risk births, and maternal and child deaths that would be averted. DHS Analytical Studies, 2015. Rockville, Maryland, USA: ICF International.
4. Canning D Schultz T P. The economic consequences of reproductive health and family planning. *The Lancet* 2012; 380:165-171.

- 189 5. Schultz TP, Shareen J. Family planning and women's and children's
190 health: consequences of an outreach program in Matlab, Bangladesh.
191 *Demography* 2013; 50(1):149-180.
- 192 6. Duvall S, Thurston S, Weinberger M, Nuccoid O, Fuchs-Montgomery N.
193 Scaling up delivery of contraceptive implants in sub-Saharan Africa:
194 operational experiences of Marie Stopes International. *Global Health Sc*
195 *Pract.* 2014; 2(1):72-92
- 196 7. Grines DA. Contraceptive implants and injectables: recent developments.
197 *The contracept Rep.* 2000; 10 (6):26-28.
- 198 8. Ladipo OA, Akinso SA. Contraceptive implants. *Afr J Reprod Health.*
199 2005; 9 (1): 16-23
- 200 9. Power J, French R, Cowan FM. Subdermal implantable contraceptives
201 versus other forms of reversible contraceptives or other implants as
202 effective methods of preventing pregnancy. *Cochrane Database of*
203 *systematic reviews.* 2007. 3: Art. No: CD001326.
- 204 10. Adekunle AO. Recent Advances in Contraceptive Development. In:
205 Okonofua F and Odunsi K (eds) *Contemporary Obstetrics and*
206 *Gynaecology for Developing Countries.* 2003. WHARC, Benin city,
207 Nigeria. 110-119.
- 208 11. Croxatto HB, Makarainen L. The pharmacodynamics and efficacy of
209 Implanon. An overview of the data. *Contraception.* 1998; 57:1-9.
- 210 12. Edards JF, Moore A. Implanon; a review of clinical studies. *Br J Fam*
211 *Plann.* 1999; 24(54):3-16.
- 212 13. Monjok E, Smesny A, Ekabua JE, Essien EJ. Contraceptive practices in
213 Nigeria: Literature review and recommendation for future policy
214 decisions. *Open Access Journal of Contraception.* 2010; 1: 9-22.
- 215 14. Aisien AO. Contraception with levonorgestrel subdermal implants
216 (Norplant) in Benin City, Nigeria: a 12 year Review. *Afre J Reprod Health.*
217 2007;11 (1):90-97
- 218 15. Ezegwui HU, Oguanuo T, Nwogu-ikojo EE. Prolonged use of Norplant
219 contraceptive subdermal implants. *Int J Gynaecol Obstet.* 2005; 88 (2):
220 162-163.
- 221 16. Blu PD, Gemzell GD, Petrova MM. Tolerability and clinical safety of
222 implanon .*Eur J. contracep & reprod health care* 2008; 13(1) 29-36.
- 223 17. Simon C. Safety profile of etonogestol contraceptive implant. *J. Gynecol*
224 *obstet Bio/Reprod* 2016; 45 (9): 1074-1082.

- 225 18. Madugu NH, Abdul MA, Bana U, Kolawole B. Uptake of hormonal implant
226 contraceptive in Zaria northern Nigeria. J Obstet gynecol 2007; 5:268-
227 273.
- 228 19. Ojule JD, Oranu EO. Experience with combined injectable contraceptive
229 (Norigynon) in Port Harcourt. BJMMR 2017; 19(1): 1-6.
- 230 20. Oranu EO, Ojule JD, Okpani JO, Review of Contraception with Depot
231 Medroxyprogesterone Acetate at the University of Port Harcourt Teaching
232 Hospital, Port Harcourt, Southern Nigeria. BJMMR 2016, 15(10): 1-6.
- 233 21. Oranu EO, Ojule JD, Orazulike NC. Associated factors in the declining
234 trend in the Use of Progestogen Only Injectable Contraceptive in a Niger
235 Delta University Teaching Hospital, Nigeria. Asian J. Med & Health.
236 2017; 3(4): 1-8.
- 237 22. Abasiattai AM, Udoma EJ, Ukeme E. Depomedroxyprogesterone acetate
238 usage at the University of Uyo Teaching Hospital, Uyo. Ann Afr Med
239 2010; 9(2):81-85.
- 240 23. Ojule JD, Oranu EO, Enyindah CE. Experience with Implanon in Southern
241 Nigeria. J med & med Sci 2012; 3(11):710-714.
- 242 24. National Population Commission (Nigeria) and ICF International. 2014.
243 Nigeria Demographic and Health Survey 2013. Rockville, Maryland, USA.
244 National population commission and ICF International.
- 245 25. Apter D, Briggs P, Tupporalien M, Grunert J, Lax E, Rybowski et al. A 12
246 month multicenter, randomized study comparing the levonogestrel
247 intrauterine system with the etonogestrel subdermal implant. Fertility
248 steril 2016; 106(1): 151-157 e5.
- 249 26. Mutihir JT, Pam VC. Overview of Contraceptive use in Jos University
250 Teaching Hospital, North-central Nigeria. Niger J Clin Pract 2008;
251 11:139-143.
- 252 27. Wasberg E, Bateson D, McGeche K, Mohalatra L. A 3 year comparative
253 study of discontinuation rate in bleeding pattern and satisfaction in
254 Australian women using contraceptive implant or progestogen intrauterine
255 system Eur J contracep reprod health care 2014; 19(1) 5-14.
- 256 28. Frie Olander E. Therapeutic options to unscheduled bleeding associated
257 with LARC Obst Gynecol Clin North AM 2015; 402(2):593-603.

- 258 29. Hou MN, McNicolas C, Creinin MD. Combined oral contraceptive for
259 bleeding complaint with etonogestrel contraceptive implant randomized
260 control trial. *Eur J contracept Refrod Health care* 2016; 21(5): 361-366
- 261 30. Vickey Z, Madam T Zhap Qiuhong, Secura G, Alsworth J, Peipert J.
262 Weight changes at 12 months in users of 3 progestogen only
263 contraceptive methods. *Contraceptive* 2013; 88(4) 503-508
- 264 31. Burkam RT. Contraception and Family Planning. In: Decherney AH,
265 Godwin TM, Nathan L, Laufer N (eds), *Currently Diagnosis and*
266 *Treatment in Obstetrics and Gynecology*. 10th ed. McGraw-Hills, New
267 York 2007; 579-597.
- 268 32. Asien AO, Idogun SE. Effects of implanon (etonogestrel) implant on serum
269 lipif and lipoproteins. *Trop J Obstet gynecol* 2016; 33(3): 257-262.
- 270 33. Lopez LM, Ramesh S, Chen-Mok M, Edelman A, Otterness C, Trussel J, et
271 al. Progestin-only contraceptives: Effects on weight. *Cochrane Database*
272 *Syst Rev*. 2014; 6:CD006033.
- 273 34. Ann BDRT, Adamu RM. Family Planning. In: Kwawukume EY, Emuveyan
274 EE (eds) *Comprehensive Obstetrics in the Tropics* 1st edition. Asante and
275 Hittscher printing press, Dansoman 2002; 375-392.
- 276 35. Charyeva Z, Oguntude O, Otolorin E, Inuwa F, Alalade O, Daladi S et al.
277 Task shift provision of Contraceptive implant to community health
278 extensive workers: Result of operation research in Northern Nigeria.
279 *Global health sci. pract* 2015; 3(3):382-394.

280

281