



COMPLICATIONS FOLLOWING USE OF SINGLE ROD ETONOGESTREL IMPLANT (IMPLANON).

1. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.
2. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.
3. MBBS, FCPS
Assistant Professor
Department of Obs & Gyne
Nishtar Hospital Multan.
4. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.
5. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.
6. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.

Correspondence Address:

Dr. Bushra Khan
Ward- 17 Nishtar Hospital Multan.
bushrakhandr@yahoo.com

Article received on:

25/03/2019

Accepted for publication:

01/10/2019

Sadia Bashir¹, Sajilah Karim², Bushra Khan³, Sadia Faiz⁴, Madeeha Riaz⁵, Amna Bibi⁶

ABSTRACT... Objectives: To determine the frequency of complications and side effects of single rod etonogestrel implant (implanon). **Study Design:** Descriptive case series. **Setting:** At Contraceptive clinic, (Reproductive Health Clinic (Contraception), antenatal clinic of the Department of Obstetrics & Gynaecology, Nishtar Hospital Multan. **Period:** From November 2014 to November 2016. **Material & Methods:** The sample included 72 healthy active women. The final outcome in this study was efficacy. **Results:** Client mean age was 28.07 ± 4.88 years. Usually clients 57 (79.2%) were 1-4 para. 5 (6.9%) clients complain of pain, out of which only 4 had pain at insertion site and 1 had pain at insertion site and also in stomach. No side effects were observed 55 clients (67.4%) main complains about menstrual disturbance like 26 (36.1%) having amenorrhoea. Continuous bleeding was the main complain in 9 clients (12.5%), heavy menstruation was found in 7 (9.7%), 10 (13.9%) had irregular bleeding. Prolonged bleeding was present in 2 clients (2.8%), 7 (9.7%) complain of spotting, 10 (13.9%) had no menstruation problem. **Conclusion:** The results of this study showed that majority of the clients had amenorrhoea.

Key words: Amenorrhoea, Contraceptive, Implanon, Etonogestrel implant.

Article Citation: Bashir S, Karim S, Khan B, Faiz S, Riaz M, Bibi A. Complications following use of single rod etonogestrel implant (Implanon). Professional Med J 2019; 26(11):1947-1951. DOI: 10.29309/TPMJ/2019.26.11.3507

INTRODUCTION

Implanon is a single rod reversible method of contraception. It contains progestin, etonogestrel 68mg which provides contraception for three years.¹ During insertion and removal, there may be chances of injury to blood vessels, skin & nerves so training is essential.² Mechanisms of action of implant are; suppression of ovulation, increased thickness of cervical mucus and atrophy of the endometrium. Effectiveness of ENG implant does not depend on the compliance of the patient so perfect and typical use failure rates are same i.e 0.05%.³ 84%³ is its one year continuation rate and 30-75%⁴ is three years continuation rate. There is 0 to 0.1%^{5,6} chances of pregnancy in first year of insertion. Efficacy of implanon is reduced in obese patient and in those taking liver enzyme inducer medicines. There may be changes in bleeding patterns while using implanon like cessation of periods (22% to 29.5%), Irregular (34%) frequent (3.9% to 6.7%) and/or continues bleeding (11.3% to 17.7%).^{7,8} Initially, in the first

three months changes in menstrual pattern are highest followed by usual menstrual pattern.⁹ Haemoglobin level is usually increased using implants.¹⁰ Bleeding abnormalities (most frequent or continuous bleeding) cause removal of implant in 4.2 -11.3%, so counselling is important before insertion.⁷ Headache (8.5% to 15.5%), increase weight gain (6.4% to 12%) acne (11.4% to 15.3%), pain in breast (9.1% to 10.2%), change in emotional behavior (5.8% to 6%) and pain in abdomen (4.3 to 5.2%) are minor side effects in implant users. Weight gain and acne are main reason for removal of implant.^{11,12} In implant users, 1.9kg weight gain has been documented over 2 years.¹³ Complications while insertion include pain, bleeding, hematoma, difficulty in insertion and implant retention in the needle of the applicator.^{8,14} Pain at the implant site is the most common complaint (29% at any visit, 0.5% at last visit). There may be chances of implant breakage (1.7%), difficulty to find out the implant due to deep insertion, fixation of implant by fibrous

tissue and adherence to underline tissue while removing it.¹⁵ The aim of this study is to identify the complications and side effects of implant after insertion.

MATERIALS AND METHODS

This descriptive case series was conducted at Family Planning clinic of the Department of Obstetrics & Gynaecology Nishtar Hospital Multan from Nov. 2014 to Nov. 2016 by using non probability consecutive sampling technique. A specialized proforma was developed to record findings of this study. The proforma included demography of the women and complications after using implanon (i.e. insertion site condition, side effects and menstrual complications). A total of 72 healthy sexually active women of reproductive age group (18 to 41 years) included in this study from Family Planning clinic of Obstetrics & Gynecology Department, Nishtar Hospital Multan. These women were having normal menstrual cycles i.e, recurring every 24 to 35 days, with an intra-individual variation of no more than 3 days. A negative pregnancy test and Pap test were required before implanon insertion. Women were excluded from study if they had used an injectable hormonal method of contraception within the preceding 6 months or other hormonal contraceptives within the preceding 2 months; or if they had used implantable contraception within the preceding 2 months. Women who had hypertension, diabetes mellitus, obesity and pelvic pathology were also excluded. Proper permission was taken from institutional Ethical Committee to conduct this study. Informed consent was taken from each patient. Descriptive statistics were applied to calculate mean and standard deviation for age and weight of the patients. Frequencies and percentages were calculated for complications following use of implanon.

RESULTS

This case series of 72 clients was conducted at Family planning clinic of Nishtar Hospital Multan for a period of two years. Mean age of the clients was 28.07 ± 4.88 years. Majority of the clients 41(56.9%) belonged to age 26–35 years, followed by 27(37.5%) clients who had ages between 16

– 25 years. There were 4 (5.6%) clients having age 36 – 45 years (Table-I). Majority of the clients 57(79.2%) were para 1–4 while 15(20.8%) clients were para 5 and above (Table-I). Insertion site complications of implanon noted were numbness in 1 (1.4%) client. Itching developed in 2 (2.8%) clients. Pain was evident in 5(6.9%) clients of which 4 had pain in arm while 1 had pain in arm and stomach also. Pain was settled in 1 client afterwards. Weakness was observed in 1 (1.4%). Of the total 72 clients, 63 had no complications at insertion site (Table-II). Side effects of Implanon showed abdominal pain, dizziness/nausea, complexion dullness, headache and abdominal cramps with cycle in 1 client (1.4%). Weight gain was evident in 8 (11%) clients. Four clients had Implanon removal. There were 55 clients (76.4%) with no side effects (Table-III). Regarding menstrual disturbances, 26 clients (36.1%) developed amenorrhea. In 9 clients (12.5%), continuous bleeding was observed while heavy bleeding was noted in 7(9.7%) clients. Irregular bleeding was evident in 10(13.9%) clients. Two (2.8%) had prolonged bleeding. Spotting was evident in 7 clients (9.7%). No menstrual problem was seen in 10(13.9%) clients (Figure-I).

Age (Years)	No. of Clients	Percentage (%)
16 – 25	27	37.5
26 – 35	41	56.9
36 – 45	4	5.6
Parity		
Para 1–4	57	79.2
Para 5 and above	15	20.8
Total	72	100.0

Table-I. Age & parity

Complication	No. of Clients	Percentage (%)
Dizziness, numbness	1	1.4
Itching at insertion site	1	1.4
Itching full body	1	1.4
Pain	5	6.9
Weakness	1	1.4
No complication at insertion site	63	87.5
Total	72	100.0

Table-II. Insertion site complications

Side Effect	No. of Clients	Percentage (%)
Abdominal pain	1	1.4
Complexion dull	1	1.4
Dizziness, nausea	1	1.4
Headache	1	1.4
Implanon removal	4	5.6
Left abdominal cramps on cycle	1	1.4
Weight gain	8	11.0
No side Effect	55	76.4
Total	72	100.0

Table-III. Side effects (excluding menstraul irregularities)

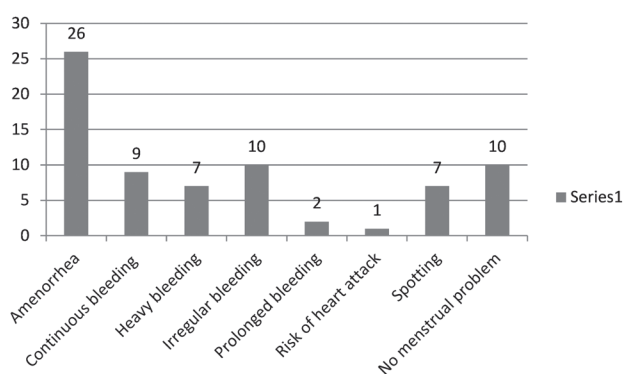


Figure-I. Menstrual complications

DISCUSSION

Implant is one of the long acting reversible contraceptive method. Single rode implanon is a modified new form. This study detected the frequency of complications related to the use of single rod implanon. In previous studies, no complications was observed while insertion and removal of implanon in 1716 women. But in this study numbness in 1 (1.4%), itching in 2 (2.8%), pain was observed in 5 (6.9%), in which 4 had local insertion site pain and 1 also had in stomach pain. Only 1(1.4%) client complaint of weakness. Abdominal cramps, nausea, vomiting, dizziness, headache were observed each in 1 client (1.4%). 8 (11%) clients had weight gain. Implanon were removed in 4 clients. And 55 (76.4%) clients had no side effects. Regarding cycle disturbances 26 (36.1%) clients complained of amenorrhea. Continuous bleeding was present in 9 (12.5%), 7 (9.7%) were complained of heavy bleeding and 10 (13.9%) had irregular bleeding. Prolonged

menstruation were present in 2 (2.8%) clients, 7 clients (9.7%) complained of spotting but 10 (13.9%) had no menstrual problems.

A study by Shazia Abid and Associates¹⁶ conducted at Nishtar Hospital Multan to detect the complication of Implanon. In that study there was no weight gain in 15 (33.33%) women but more than 2Kg weight gain in 28.90% and reduction in weight was observed in 12 women (26.67%) 35 (77.78%) women had no breast pain but 10 (22.22%) had breast pain. Skin problems were observed in 5 females (11.10%). Regarding menstrual disturbance 6 women (13.33%) had normal menstrual cycle, amenorrhea in 20 women (44.44%). Irregular bleeding in 13 women (28.90%). Heavy menstruation in (13.33%) and 85% female had abnormal menstrual cycle.

Syed Muhammad Ali and Colleagues¹⁷ were conducted another study in Nishtar Hospital Multan. 91 clients used femplant and (23.07%) showed irregular bleeding. Anja Lendvaya et al¹⁸ compared sino implant effectiveness, safety in the first year use in Pakistan and Kenya. 23 Kenyan & 77 Pakistani were removed implants within 12 months. Headache (6.1% Kenya and 36.6% Pakistani) was the main side effect, mood changes (1.0% in Kenya, 18.1% Pakistani), weight gain (3.9% Kenya, 11.7% Pakistani) and hair loss (7.7% Pakistani only). 93% Kenyan and 73% Pakistani had acceptable bleeding pattern during follow up. In Sergent et al study,^{19,20} (83%) having menstrual disturbances, 26% amenorrhea, 40% irregular bleeding, 37% having weight gain. Guazzelli CA et al²¹ showed irregular bleeding in 38.6% women using implanon. Ojule JD et al²² showed implanon complications like spotting in 11 (52.4%), amenorrhea in 4 (19.0%), heavy bleeding in 2 (9.5%), 2 (9.5 %) having intermenstrual bleeding. Breast tenderness in 1 (4.8%), weight gain in 1 (4.8%).

Moazzam Ali et al²³ compared etonorgestrel implants to Levonorgestrel implants. 387 implanon users had different side effects like headache in 198 clients, dizziness in 130, acne in 89, lower abdominal pain in 134, amenorrhea in 65, irregular bleeding in 280, heavy bleeding

in 103 and prolonged bleeding in 165. In Thailand, Sompop Nilpetchploy and Surasak Taneepanichskul²⁴, a study was conducted to show the side effects of Levonorgestrel implanon. 43.5% had irregular bleeding in first three months, but 33.9% later on normal cycle and amenorrhea in 22.6%. Six months follow up showed that 54.8% had amenorrhea followed by irregular bleeding 24.2% and regular cycle 21.0%. Weight gain in 59.7%, acne in 9.7%, nausea in 1.6%, alopecia 1.6%. Jaclyn Grentzer showed irregular bleeding pattern like amenorrhea, prolonged bleeding while using ENG implant.²⁵ A meta-analysis evaluated bleeding patterns over 2 years in 780 women. More than 3000 90-day reference periods were assessed. Of the women evaluated, 22% had amenorrhea, 34% infrequent bleeding (<three episodes of bleeding or spotting), 7% frequent bleeding (>five episodes of bleeding) and 18% prolonged bleeding (\geq one bleeding episode lasting >14 consecutive days).²⁶

CONCLUSION

This study showed that most common problems following use of implanon were pain, weight gain and amenorrhea.




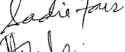

Copyright© 01 Oct, 2019.

REFERENCES

1. Brache V, Faundes A, Alvarez F. **Risk-benefit effects of implantable contraceptives in women.** Expert Opin Drug Safety. 2003; 2:321–32.
2. Croxatto HB, Urbancsek J, Massai R, Coelingh Bennink H, van Beek A, Implanon Study Group. **A multicentre efficacy and safety study of the single contraceptive implant Implanon.** Hum Reprod. 1999; 14:976–81.
3. Trussell J. **Contraceptive failure** in the United States. Contraception. 2011; 83:397-404.
4. Graesslin O, Korver T. **The contraceptive efficacy of Implanon: A review of clinical trials and marketing experience.** Eur J Contracept Reprod Health Care. 2008; 13(Suppl 1):4-12.
5. Steiner MJ, Lopez LM, Grimes DA, Cheng L, Shelton J, Trussell J, et al. **Sino-implant (II) da levonorgestrel-releasing two-rod implant: Systematic review of the randomized controlled trials.** Contraception. 2010; 81:197-201.
6. Lendvay A, Otieno-Masaba R, Azmat SK, Wheelless A, Hameed W, Shaikh BT, et al. **Effectiveness, safety and acceptability of Sino-implant (II) during the first year of use: results from Kenya and Pakistan.** Contraception. 2014; 89:197-203.
7. Mansour D, Korver T, Marintcheva-Petrova M, Fraser IS. **The effects of Implanon on menstrual bleeding patterns.** Eur J Contracept Reprod Health Care. 2008; 13(Suppl 1):13-28.
8. Darney P, Patel A, Rosen K, Shapiro LS, Kaunitz AM. **Safety and efficacy of a single-rod etonogestrel implant (Implanon): Results from 11 international clinical trials.** Fertil Steril. 2009; 91:1646-53.
9. Zheng SR, Zheng HM, Qian SZ, Sang GW, Kaper RF. **A randomized multicenter study comparing the efficacy and bleeding pattern of a singlerod (Implanon) and a six-capsule (Norplant) hormonal contraceptive implant.** Contraception. 1999; 60:1-8.
10. Dilbaz B, Ozdegirmenci O, Caliskan E, Dilbaz S, Haberal A. **Effect of etonogestrel implant on serum lipids, liver function tests and hemoglobin levels.** Contraception. 2010; 81:510-4.
11. Blumenthal PD, Gemzell-Danielsson K, Marintcheva-Petrova M. **Tolerability and clinical safety of Implanon.** Eur J Contracept Reprod Health Care. 2008; 13(Suppl 1):29-36.
12. Urbancsek J. **An integrated analysis of nonmenstrual adverse events with Implanon.** Contraception 1998; 58(6 Suppl):109Se15S.
13. Beerthuizen R, van Beek A, Massai R, Makarainen L, Hout J, Bennink HC. **Bone mineral density during long-term use of the progestagen contraceptive implant Implanon compared to a non-hormonal method of contraception.** Hum Reprod 2000; 15:118e22.
14. Meirik O, Brache V, Orawan K, Habib NA, Schmidt J, Ortayli N, et al. **A multicenter randomized clinical trial of one-rod etonogestrel and tworod levonorgestrel contraceptive implants with nonrandomized copper-IUD controls: Methodology and insertion data.** Contraception 2013; 87:113e20.
15. Mommers E, Blum GF, Gent TG, Peters KP, Sordal TS, Marintcheva-Petrova M. **Nexplanon, A radiopaque etonogestrel implant in combination with a next-generation applicator: 3-year results of a noncomparative multicenter trial.** Am J Obstet Gynecol 2012; 207:388.e1e6.
16. Abid S, Iqbal N, Anwar S, Rao SI. **Complications with Implanon as Contraceptive.** Annals of King Edward Medical University. 2008;14(2):75-8.

17. Ali SM, Mazhar S, Masood S. **Frequency of irregular vaginal bleeding in women using Femplant.** P J M H S. 2015; 9(2):776-8.
18. Lendvaya A, Otieno-Masaba R, Azmat SK, Wheelless A, Hameed W, Shaikh BT, et al. **Effectiveness, safety and acceptability of Sino-implant (II) during the first year of use: Results from Kenya and Pakistan.** Contraception. 2014; 89:197-203.
19. Zheng SR, Zheng HM, Qian SZ. **A long term study of the efficacy and acceptability of a single rod hormonal contraceptive implant in healthy women in China.** Eur J Contracept Reprod Health Care. 1999; 4:85-93.
20. Sergent F, Clamageran C, Bastard AM. **Acceptability of the etonogestrel containing contraceptive implant (implanon).** J Gynaecol Obstet Reprod. 2004; 33:407-15.
21. Guazzelli CA, de Queiroz FT, Barbieri M, Torloni MR, de Araujo FF. **Etonogestrel implant in postpartum adolescents: bleeding pattern, efficacy & discontinuation rate.** Contraception. 2010; 82:256-7.
22. Ojule JD, Oranu EO, Enyindah CE. **Experience with implanon in Southern Nigeria.** JMMS. 2012; 3(11):710-4.
23. Ali M, Akin A, Bahamondes L, Brache V, Habib N, Landoulsi S, et al. **Extended use up to 5 years of the etonogestrel-releasing subdermal contraceptive implant: Comparison to levonorgestrel-releasing subdermal implant.** Hum Reprod. 2016; 31(11):2491-8.
24. Nilpetchploy S, Taneepanichskul S. **Effects of a single rod etonogestrel used in healthy Thai women aged between 17 and 35 years in King Chulalongkorn Memorial Hospital.** Thai J Obstet Gynaecol. 2002; 14:291-5.
25. Grentzer J, mcnicholas C, Peipert JF. **Use of the etonogestrel-releasing contraceptive implant.** Expert Rev of Obstet Gynecol. 2013; 8(4):337-44.
26. Mansour D, Korver T, Marintcheva-Petrova M, Fraser IS. **The effects of Implanon on menstrual bleeding patterns.** Eur J Contracept Reprod Health Care. 2008; 13(Suppl. 1):13-28.

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Sadia Bashir	Data collection and paper writing.	
2	Sajilah Karim	Data collection and helping in paper writing.	
3	Bushra Khan	Reviewing the article.	
4	Sadia Faiz	Data analysis.	
5	Madeeha Riaz	Data analysis.	
6	Amna Bibi	Data collection.	