

Original Article

EFFICACY OF SINGLE ROD CONTRACEPTIVE IMPLANT: IMPLANON

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Objective: To evaluate the efficacy of implanon in women in post partum period.

Material and Methods: The Study was carried out in one year period from 01-01-14 till 31-12-14, in Gynae Unit-II, Services Institute Of Medical Sciences /Services Hospital Lahore. Women recruited were within three days after child birth. First followup was advised after one week and then at six weeks.

Results: Total 152 patients had implanon insertion in one year period. Total births were 3502, caesarean section 1804 & spontaneous vaginal delivery 1698. Among side effects irregular bleeding in 37 (24.3%) patients, expulsion 7 (4.6%), weight gain 12 (7.8%), mood changes 15 (9.8%) and no pregnancy occurred in one year follow up.

Conclusion: Implanon demonstrated excellent contraceptive efficacy and was well tolerated.

Keywords: % percent, Yrs years.

Introduction

Diabetic neImplanon has the highest efficacy among available contraceptive methods¹ Optimal efficacy is due to the mechanism of action, which is ovulation inhibition combined with the fact that the method is independent of user compliance.

It is a single rod subdermal contraceptive implant made by Merck & Co that is inserted just under the skin of a women's upper arm and contains etonogestrel.² Implanon has 15mg barium sulphate added to core, so detectable by X-ray.³ It has preloaded applicator for easier insertion.⁴ Implanon was first approved for use in Indonesia in 1998. Then approved for use in United States in 2006. Subdermal contraceptive implants are now used by 11 million women around the world and approved for use in over 60 countries in 2003.⁵ Implanon consists of a single rod made of ethylene vinylacetate copolymer that is 4 cm long and 2 mm in diameter.⁶ It is similar to a match stick in size. The rod contains 68 mg of etonogestrel (sometimes-called 3 keto-destrogestrel) a type of progestin. Peak serum etonogestrel concentrations have been found to reach 781-894 pg/ml, in first few weeks and 156-177 pg/ml after 3 years, maintaining ovulation suppression and contraceptive efficacy.⁷

Serum levels maintain relatively stable through 36 months, which implies that the method may be effective for longer than 3 years.⁸ During 3 years, pregnancy did not occur.⁸ Implanon is effective in 99% cases to prevent pregnancy in the duration of 3 years.⁽¹⁾ Implanon releases progestogen, that is synthetic hormone. It prevents ovulation and thickens the mucus of cervix. The thickened mucus

prevents the sperm and egg from fertilization.

Among advantages, it is reversible contraception. Once rod is removed, again pregnancy can occur.⁹ The rod is extremely subtle. In disadvantages, implanon can cause irregular bleeding and spotting. Pain and scarring can be associated with the insertion rod removal of implanon. It may not work in obese women. There is increased risk of thrombosis especially in smokers, ovarium cyst, headach, weight gain, depression, acne and breast pain. It cannot protect against sexually transmitted diseases. Women who are being treated for hyper lipidemias, should be followed closely if they use hormonal contraceptive. Some progestogens may elevate LDL levels. Implanon should not be used in women who have known or suspected pregnancy, current or past history of thrombosis or thrombo embolism disorders, liver tumours, benign or malignant, active liver disease undiagnosed abnormal uterine bleeding and breast cancer.¹⁰

Material and Methods

The study was carried out in the department of obstetrics and gynaecology unit II, Services Institute of Medical Sciences / Services Hospital Lahore between 1-Jan-2014 to 31st-Dec-2014.

Counselling was done in antenatal period in booked patients and then in latent phase of labour and postnatal period. In unbooked patients counselling was done after delivery of placenta. Written Consent was taken from husband and mother-in-law. Within three days of delivery implanon insertion was done. Patient was called for followup first after one week and then after six weeks. Patient was discussed about

About side effects like irregular bleeding, weight gain, expulsion & about failure rate.

Exclusion Criteria:

- Nulliparous Woman.
- Smoker.
- Patients suffering from liver disease.
- Previous history of deep venous thrombosis.

Inclusion Criteria:

- Cardiac patients.
- Hypertensive & Diabetic patients.
- Previous one or more Caesarean sections.
- Multigravidae.

Results

Total Births.	3502
Spontaneous Vaginal Births.	1698
Caesarean sections.	1804

Table-1: Demographic Characteristics of Patients. Total Implanon Insertions 152.

Age	No of Insertion	Percentage
<20 Years	15	9.86%
20-30 Years	103	67.76%
>40 Years	35	23.03%
Parity		
1 - 2	09	5.92%
2 -4	112	73.68%
>4	32	21.05%

Table-I Shows maximum insertion occurs between 20-30yrs and in P2-P4.

Table-2: Dindications of Insertion (Total Insertion 152)

Indications	Number	Percentage
Cardiac Patients	13	8.55%
Previous 1 more ceaserean section	81	53.28%
Hypertensive disorders	23	15.13%
Grand multigravidae	28	18.42%
Multiple gestation	07	4.60%

Table-II shows maximum insertions were seen in indication of previous one or more C-sections.

Table-3: Complications (Total Insertion 152).

Complication	No of Insertion	Percentage
Bleeding Problems	37	24034%
Expulsion	07	4.60%

Weight Gain	12	7.89%
Mood Changes	15	9.86%
Pregnancy	0	0%
Removal of implanon	05	23.68%

Table III shows no pregnancy occurred in one-year period and expulsion rate is minimum.

Table-4: Followup (Total Insertion 152).

Indications	Number	Percentage
Follow up after 1 week	81	53.28%
Follow up after 6 weeks	35	23.02%
Last follow up	36	23.68%

Table-IV Shows Maximum follow-up after one week.

Discussion

Among women 18-35yrs of age at entry into clinical trials, 6 pregnancies occurred during two years of use. Real life typical use trials were conducted in 20,486 Australian women, using implanon. An analysis of the findings from the study indicated:

- 19 were inserted at the wrong time, resulted in pregnancy.
 - 84 were inserted with improper insertion training
 - Three were expulsions
 - 8 were drug-drug interactions¹¹
- Insertion errors led to a similar experience in France. Between May 2001 & September 2002, thirty-nine pregnancies were reported in women using implanon, which had been inserted incorrectly.¹² The incidence of reported pregnancies was estimated at 0.359/10,000 implants. The majority of the unintended pregnancies were due to improper timing or failure to successfully implant the device:
- 30 implants were not actually inserted.
 - Two were drug-drug interactions.
 - Four were untimely insertions.
 - Two others were lost to follow-up.

In other post marketing studies of implanon, no pregnancies occurred following insertion. Implanon users were followed for three years in a study of 417 women in Mexico City.¹³

The observation period was 27.5 months per women. No pregnancy accrued in this study for pearl index of 0.0. The continuation rate was 61.4%.

A United Kingdom study followed 106 women using implanon for 3 years.¹⁴ The continuation rate was 69.8% at 1 year. 44.1% at 2 years and 30.2% at three years. No pregnancy occurred during this time.

There is no evidence that body weight affects the efficacy of implanon, although clinical trials of this method included few women who weighed more than

90kg. The health care provider should discuss this aspect of implanon efficacy when counselling overweight women.¹⁵ A few cases of ectopic pregnancy among patients using implanon were recorded, although there is no evidence of any casualty. Concomitant use of any enzyme inducer rifampicin resulted in ovulation and this subsequent ectopic pregnancy occurred in one case report¹⁶ In our study of one year follow-up, no pregnancy occurred neither intrauterine nor ectopic pregnancy. Bleeding problems occurred in 24.3%, expulsion occurred in 4.60%, weight gain in 7.89% and mood changes in 9.86%. In unsatisfied patients 3.28% implanon was removed.

Conclusion

Implanon demonstrated excellent contraceptive efficacy and was well tolerated during three years of use. The vaginal bleeding pattern was variable and was characterized by relatively few bleeding events, but proved acceptable to most subjects. Because of single rod design, implanon was quickly inserted and removed.

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