EFFICACY, SATISFACTION, AND DISCOMFORT OF LONG ACTING CONTRACEPTIVE METHODS IN SULAIMANI CITY, IRAQ: A COMPARATIVE FOLLOW UP STUDY

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ABSTRACT

Background

The choice of available contraceptive methods has increased in recent years At the same time, women's awareness of methods and reasons for their method choice, or reasons for changing methods, is limited. Long-acting reversible contraception (LARC) in the form of intrauterine devices (IUDs) and the subdermal implant are starting to use.

Objectives

The aim of this study was to assess the efficacy, satisfaction, and discomfort of two common types of long acting contraceptive methods in Sulaimani City.

Patients and Methods

The study was a comparative follow up study, 80 non pregnant married women at reproductive age were included. Verbal consent was taken from the lady to use one of the methods. Patients were allocated in to two groups, 40 were using long acting reversible contraception LARC (Intrauterine levonegesterl loaded system "Mirena", while the others 40 patients used subdermal progestene "Implanon". Insertion of both methods were performed by the researcher by following the scientific guides and techniques.

Results

Mean age of patients with Implanon use was nearly 30 years old, while for those using Mirena was 34.5; this difference statistically was highly significant. Highest level of satisfaction (65%) was reported among women using Mirena, while high percentage of dissatisfaction was reported among women who were using Implanon, this association statistically was highly significant.

Conclusion

Highest level of satisfaction, decrease in duration of blood flow, and discomfort during insertion were reported among women were using Mirena, Generally there are significant reduction in heavy blood flow, and presence of dysmmenrohea one year after insertion of both types of long acting contraception.

Keywords: *Mesne discomfort, Mirena, Implanon, Long Acting Contraception.*

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INTRODUCTION

Around the world it is estimated that about 30% of pregnancies are unplanned. The effectiveness of any type of the contraception rather than LARC depends on its correct and consistent use. By contrast; the effectiveness of long-acting reversible contraceptive (LARC) methods does not depend on daily concordance [1]. Pregnancy rates at 1 year approach 90 percent for sexually active fertile women who do not use contraception.

Because ovulation often precedes menstruation, young women should be advised to use contraception whenever they begin sexual activity, half of those unintended pregnancy were using a contraceptive method in the month in whicht he pregnancy occurred. The majority of pregnancies result from incorrect or inconsistent method use more than from method failure [2]. A wide variety of effective methods of regulating fertility is currently available. None is completely without side effects or categorically without danger-for example, latex condoms can cause anaphylactic reactions.

There is growing interest in increasing women's use of long-acting reversible contraception to reduce rates of unintended pregnancy [3]. In addition,th e IUD could serve as an alternative to female sterilization given the method's with comparable efficacy and lower cost .

Others also note that greater IUD use among women who wish permanent contraception may reduce the incidence of post-sterilization regret (Allen, et al., 2009). The ENG implant hasa failure rate approaching 0% while the levonorgestrel intrauterine system (LNG-IUS) hasa low failure rate of 0.2% over the course of one year [4]. The compliance of the patient and correct use of LARC is of critical importance in the prevention of pregnancy.

Minimizing dose frequency is one way of improving adherence with hormonal contraception [5]. Many recent data support the use of long-acting reversible contraception (LARC) such as the intrauterine device and subdermal implant as the most effective methods of contraception with the highest continuation rates and high levels of patient satisfaction.

Nulliparous women and adolescents are one of target population for the use of the intrauterine device now. Before the patient considers initiating a new contraceptive method, it is important to consider the characteristics of each method, including the side effects, effectiveness, and patient acceptability [6]. The subdermal implant, Implanon is a single-rod measuring 4 cm that releases 68 μg, which is inserted into the subcuticular tissue of the inner upper arm under local anesthesia .

This method will prevent pregnancy primarily by inhibiting ovulation and causing endometrial atrophy, by thickening cervical mucus Implanon, may also work by inhibiting sperm penetration through the cervix. So implant is highly effective and easy use.

The contraindications for the Implanon use are, pregnancy, undiagnosed abnormal vaginal bleeding, breast cancer, active liver disease, and allergies to any components of the device. One of the side effect of the single-rod implant is unpredictable and irregular bleeding. Other potential side effects include headaches, weight gain, and mood changes.

Immediately after insertion patients may experience temporary bruising and soreness at the insertion site. The subdermal implant is an excellent method for women who desire long-term, reversible contraception and who are willing to tolerate unpredictable bleeding [1]. Levonorgestrel-Releasing Intrauterine System (Mirena ®) (LNG-IUS) is a T-shaped frame made of polyethylene that releases levonorgestrel at a rate of 20 μg/day. LNG-IUSprovides 5 years of reliable contraception [2] which had 0.2% failure rate in the first year [3].

Progestin actions are by the thickening of cervical mucus, inhibition sperm capacitation and motility causes endometrial atrophy, and may suppress ovulation in some women [4]. Advantages of the LNG-IUS include, high effectiveness and easy to use. Also it is not contraindicated in most patients with medical comorbidities and in women who cannot use estrogen-containing contraceptives. It can also be used with most medications. Non contraceptive health benefits include decreased risk of ectopic pregnancy, decreased risk of endometrial cancer, decreased menstrual blood loss, and decreased dysmenorrhea.

Contraindications to the LNG-IUS include pregnancy, pelvic inflammatory disease (PID) current or within the past 3 months, pelvic inflammarty disease , puerperal or post abortion sepsis (current or within the past 3 months), undiagnosed abnormal vaginal bleeding, genital tract malignancy, known uterine anomalies incompatible with insertion, known pelvic tuberculosis, allergies to the components, breast cancer

within 5 years, or active liver disease [5] can be used for both nulliparous and parous women, even young women and adolescents. The complications at the time of insertion are uterine perforation, expulsion, bleeding, and cramping [6].

The aim of this study was to asses efficacy, satisfaction, and discomfort of two common types of long acting contraceptive methods in Sulaimani City.

METHODS AND PATIENTS

The study was a comparative follow up study, 80 non pregnant married women at reproductive age was included in the study after giving full explanation about mode of action of the types of contraception, and the side effects of them and the possible interference with menstrual cycle pattern, verbal consent was taken from the lady to use one of the methods.

The study was done in private gynecological and obstetrical clinic at the beginning of 2013 in Sulaimani city. Patient was allocated in to two groups, 40 were using long acting reversible contraception LARC (Intrauterine Levonegesterl loaded system Mirena", while the others 40 patients were used subdermal progestene "Implanon". Insertion of both methods were performed by the researcher by following the scientific guides and techniques.

Mirena is inserted with the provided inserter into the uterine cavity within seven days of the onset of menstruation. The patient was in lithotomy position, the a speculum was inserted into the vagina to visualize the cervix and rule out genital contraindications to the use of Mirena. After cleaning the cervix and vagina with a suitable antiseptic solution; the upper lip of the cervix was grasped with a Tenaculum forceps and apply gentle traction to align the cervical canal with the uterine cavity. A uterine sound gently inserted to check the patency of the cervix, measure the depth of the uterine cavity, confirm its direction and exclude the presence of any uterine anomaly. After confirming that the patient is appropriate for Mirena, open the carton containing Mirena. To provide safe procedure for the patient, we followed these steps: Open the sterile package completely Place sterile gloves on the hands, Hold the handle of the inserter containing Mirena and carefully release the threads so that they hang freely. Place the thumb or forefinger on the slider. Make sure that the slider is in the furthest position away from you, i .e., at the top of the handle towards the insertion tube with the centimeter scale of the insertion tube facing up, check that the arms of Mirena are in a horizontal position. If they are not, align them on a flat, sterile surface, for example, the sterile package Load Mirena into the insertion tube Holding the slider in the furthest position, pull on both threads to load Mirena into the insertion tube .

Note that the knobs at the ends of the arms now meet to close the open end of the insertion tube The insertion of the implanon: good light source and complete set of equipment should be available, after the councelling with the pateint. The woman lies on the examination bed with her arm flexed and externally rotated, and her hand next to her head. Infiltrate with local anaesthetic. Mark the insertion point at 8-10 cm above the medial epicondyle of the non-dominant upper arm and another point around 4 cm above as a direction guide.

Then the patient was followed for a duration of one year after the insertion of the contraceptive method, the pattern of the cycle and whether any changes in the form of prolonged, irregular bleeding, the presence of dysmenohea and the satisfaction of the patient with chosen method ,were evaluated before the insertion and after 1 year.

Data collection was performed by direct interview, data entered in to Excel Sheet, and then transferred to SPSS-V22, Chi square, and T and F test were used to find relationship between variables. Complete consent where obtained from the patient by explaining all aspects of intervention, and their advantages with disadvantages. In addition, ethical approval was obtained from ethical committee of College of Medicine, University of Sulaimani.

RESULTS

Mean age of participants was 32.2 years old, also 20 years as a minimum and 46 years old as a maximum age of participants was reported. Mean age of patient with implanon use nearly 30 years old, while for those using Mirena was 34.5, this difference statistically was highly significant. Near 95% of all participants were illiterate and 45% had a diploma and bachelor Levels of educations.

Majority of participants (87%) with gravida in between 2-5, nearly 86% of participants have a 2-4 parities. Highest level of satisfaction (65%) was reported among women were using Mirena, while high percentage of dissatisfaction was reported among women who

were useing Implanon, this association statistically was highly significant. Generally discomfort during insertion was reported among all cases of Mirena, while not any discomfort during insertion of Implanon, the association was highly significant.

Generally there are significant reduction in heavy blood flow, and presence of dysmmenrohea one year after insertion of both types of contraception, also both types of contraception significantly lead to decrease regularity of mense one year after using of both types of contraception.

Regarding Numbers of days of menstrual flow, there is highly significant reduction in the duration of menstrual blood flow in between pre and post use of Mirena, while there was not any significant reduction regarding duration of blood flow after insertion of Implanon.

Level of general satisfaction was assessed for both studied types of contraception, Highest level of satisfaction (65%) was reported among women were using Mirena, while high percentage of dissatisfaction was reported among women who were useing Implanon, this association statistically was highly significant(P value= 0.005) (Figure 1).

Generally discomfort during insertion was reported among all cases of Mirena, while not any discomfort was reported during insertion of Implanon, this association was highly significant (p value=0.001). Use of local anaesthesia during insertion was mostly used for nearly 95% of patient with implanon use. Failure of contraception only reported among only one women after using of Mirena (Table 2).

Generally there are significant reduction of heavy blood flow, and presence of dysmenorrhea one year after insertion of both types of contraception (P value= <0.001), also both types of contraception significantly lead to decrease regularity of mense one year after uses of both types of contraception(P value= <0.001).

Regarding duration of menstrual blood flow, there is highly significant reduction in the duration of menstrual blood flow in between pre and post use of Mirena (reduction from 7.2 to 4.5 days) (p value=0.003), while there was not any significant reduction regarding duration of blood flow after insertion of implanon (Table 3).

Table 1. Difference between age and some of obstetrical history among both studied groups.

Variables	Types of contraception		P values
	Implanone Mean ±S.D	Mirena Mean ±S.D	
Age (Years)	29.9±5.4	34.5±5.8	0.001
Gravida	3.1±1.9	3.5±1.2	0.333
Parity	2.8±1.5	3.0±0.9	0.379
Mischarge	1.1±0.4	1.1±0.3	0.697
Numbers of days of menstrual flow	6.3±1.5	7.2±2.8	0.118

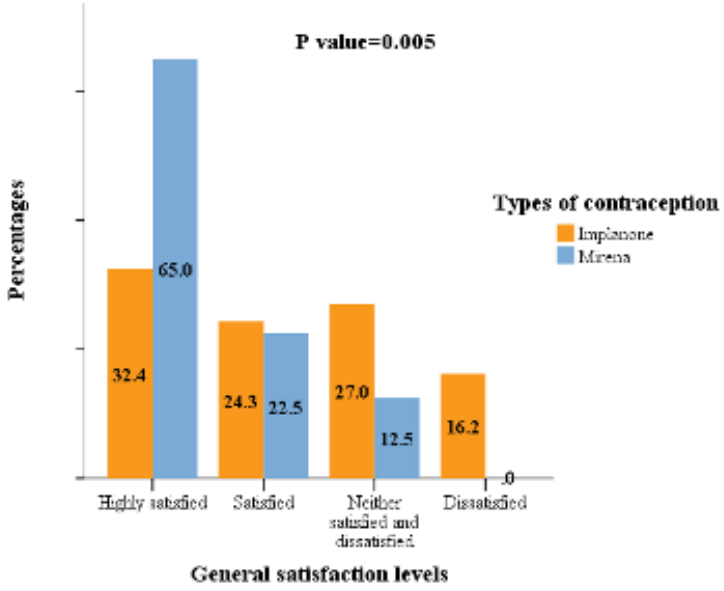

Figure 1. Level of general satisfaction among clients for both studied types of contraception.

Table 2. Comparison between types of contraception in relation with discomfort, using of anesthesia during insertion ,and failure of contraception.

Variables	Types of contraception		P values
	Implanone N(%)	Mirena N(%)	
Discomfort during insertion			
Yes	0(0.0%)	10(100.0%)	0.001
No	39(36.5%)	43.5(43.5%)	
Use of local anaesthesia during insertion			
Yes	23(95.8%)	1(4.2%)	<0.001
No	16(29.1%)	39(70.9%)	
Failure of contraception			
Yes	0(0.0%)	1(100.0%)	0.332
No	37(48.7%)	39(51.9%)	

Table 3. Comparing signs and symptoms in pre and post use of studied contraception.

Types of contraception	Signs and symptoms	Status		P values
		Pre use contraception N(%)	Post use contraception N(%)	
Implanon	**Regularity**			
	Yes	38(88.4%)	5(11.6%)	<0.001
	No	1(3.0%)	32(97.0%)	
	Types of blood flow			
	Heavy	4(66.7%)	2(33.3%)	
	Medium	29(93.5%)	2(6.5%)	<0.001
	Light	5(14.7%)	29(85.3%)	
	Presence of Dysmenorrhea			
	Yes	10(83.3%)	2(16.7%)	0.015
	No	28(45.2%)	34(54.8%)	
Mirena	**Regularity**			
	Yes	35(77.8%)	10(22.2%)	<0.001
	No	5(14.3%)	30(85.7%)	
	Types of blood flow			
	Heavy	10(100.0%)	0(0.0%)	<0.001
	Medium	27(90.0%)	3(10.0%)	
	Light	3(10.7%)	25(89.3%)	
	Presence of Dysmenorrhea			<0.001
	Yes	20(100.0%)	0(0.0%)	
	No	20(33.3%)	40(66.7%)	

Table 4. Difference menstrual blood flow duration in between pre and post use of studied contraception.

Types of contraception	Numbers of menstrual flow (Days) Mean ±S.D	P values
Mirena		
Pre use contraception	7.2±2.8	0.003
Post use contraception	4.5±2.7	
Implanone		
Pre use contraception	6.3±1.5	0.371
Post use contraception	5.4±3.0	

DISCUSSION

In this study there was significant difference in the age of the users between two groups; those who choose implanon were younger than those who choose mirena, by reviewing of the previous articles probably this is an accidental finding.

None of the knowledge questions were found to signify the association between age and specific LARC method choice and were not included in the final multivariable model [7, 8]. Generally discomfort during insertion was reported among all cases of Mirena, while not any discomfort during insertion of Implanone, association was highly significant.

This is because, in all cases of implanon subdermal injection of lidocain anesthetic agent was given which was mandatory in all cases. Regarding patient satisfaction with the Mirena, it was 65%, while high dissatisfaction with implanon, this is due to high irregularity in the menstrual pattern. This is goes with one metaanalysis that included 780 women and evaluated bleeding over a total of 3315 reference periods of 90 days each during the first 2 years after ENG implant insertion, 22 % of the studied group were found to have amenorrhoea, 34% infrequent bleeding (<3 episodes of bleeding or spotting), 7% frequent bleeding (>5 episodes of bleeding) and 18% prolonged bleeding (=1 bleeding episode lasting >14 consecutive days). Those changes in the menstrual cycle lead to early discontinuation of the method in 10–14% of patients [9, 10].

Satisfaction was high for IUDs with over 80% satisfied, of which 66–70% reported being very satisfied. Satisfaction with the implant was also quite high with 79% satisfied, of which 55% reported being very satisfied [11]. Generally discomfort during insertion was reported among all cases of Mirena, while not any discomfort during insertion of Implanon, association was highly significant.

This is because of the use of local anasthesia before the insertion of the implanon. In this study there are significant reduction in heavy blood flow, and presence of dysmmenrohea one year after insertion of both types of contraception, also both types of contraception significantly lead to decrease regularity of mense one year after uses of both types of contraception. Those findings are going with the finding of other research in USA [12].

Average monthly blood loss drops by approximately 90% and 20–40% of women become amenorrhoeic at 1 year [13, 14]. This device is ideal in women with menorrhagia. In fact, the LNG-IUS often replaces the invasive interventions of endometrial ablation or hysterectomy. The local delivery of a progestin has also been shown to decrease the volume and size of uterine myoma with a resultant decrease in blood flow [12, 15, 16].

Also the same finding in reduction of the dysmenorrhea, are similar to the finding of article 16. The ENG implant has also been useful in improving acne and relieving symptoms associated with dysmenorrhoea and endometriosis. In one study of women using the ENG implant for up to 2 years. The same study showed that 48% of women reported decreased dysmenorrhea following ENG implant insertion, with only 8% reporting an increase in the same symptom [17].

In a different study evaluating the effects of the ENG implant on women with endometriosis, the mean score for dysmenorrhoea was improved [18]. Regarding duration of menstrual blood flow, there is highly significant reduction in the duration of menstrual blood flow in between pre and post use of Mirena (reduction from 7.2 to 4.5 days) (p value=0.003), while there was not any significant reduction regarding duration of blood flow after insertion of implanon. This is similar with other finding of Mansour et al (the effect of implanon on the menstrual bleeding pattern [19].

In conclusion, first, both methods of LARC (long acting reversible contraception) are effective in the preventing pregnancy within one year of study. Second, there was high level of satisfaction with the Mirena despite the discomfort at the time of insertion; the high level of dissatisfaction with Implanon was due to abnormal bleeding pattern. Third, there was no case of discontinuation neither Mirena nor for Implanon within and one year of the usage.

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