Experience of Women after Immediate Postpartum Insertion of Intrauterine Contraceptive Device (PPIUCD), a Long-Acting Reversible Contraception

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Abstract

Objectives: To assess women's experience after immediate postpartum insertion of an intrauterine contraceptive device (PPIUCD), long-acting reversible contraception.

Methods: This prospective and longitudinal study was conducted from February 2019 to September 2019 in Gynaecology and Obstetrics department Unit 1 at Abbasi Shaheed Hospital over 8 months. All booked and non-booked women who delivered in the hospital and received immediate postpartum intrauterine contraceptive device (PPIUCD), either post placental, intra cesarean, or within 48 hours after delivery, were included in the study. Written consent was taken for the contraceptive device insertion. Verbal consent was taken to fill the proforma, which included basic demographic information on their overall experience with the postpartum intrauterine contraceptive device. The immediate experience was measured by assessing the pain during the procedure and post-insertion period. All participants were further followed at six weeks and 6 months to collect information about any complaint, removal of IUCD and overall experience.

Results: The mean age was 27.3 years with a standard deviation (SD) of 4.42. Among all the participants, 77 (54.6%) had a Cesarean section, and 64(45.4%) had a vaginal delivery. 5 (3.5%) had complained of mild pain during the procedure. Discomfort during intercourse was found in 14 (11.97%) participants at six weeks postpartum.7 (5.98%) at 6 weeks and 9 (7.96%) at 6 months removed the IUCD. Around 86 (73.5%) participants at 6 weeks and 78 (69.03%) participants at 6 months had no complaints. Overall experience was found satisfactory in 86 (73.5%) participants.

Conclusion: Postpartum intrauterine contraceptive device (PPIUCD) provided a satisfactory experience to the majority of the women, and they preferred to choose again.

Keywords: Immediate postpartum intrauterine contraceptive device, long-acting reversible contraception, Satisfaction, Complains, Removal.

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Introduction

Family planning is a vital part of healthy well-being as it aims at decreasing maternal, infant, and childhood mortality and morbidity. However, if the inter-delivery interval is relatively short, it could lead to adverse complications and the worst prognosis to mother and child[1]. Therefore, after delivery, family planning helps prevent undesirable and unintended pregnancies following the first twelve months after childbirth[1,2].

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The prevalence of undesirable pregnancies in Pakistan is between 38 to 46%[3]. Even though strategies have been implemented to prevent fertility rates in developing countries, 10 to 20% of women seem to benefit from these strategies, making up to 120 million people.

Nevertheless, more than 24% of the Sub-Sahara African population still complains about the lack of support to meet the need for contraception[4]. In the Pakistani population, family planning practice is very low. A study confirmed 81.8% of women lacked awareness regarding family planning and never practiced it[2]. The average fertility rate in Pakistan is 3.07 per year. In contrast, the use of contraceptive prevalence rate is between 30 to 35% and out of which only 2% of women use the intrauterine contraceptive device to prevent pregnancy[5,6].

Intrauterine contraceptive devices (IUDs) are recommended by ACOG and the American Academy of Pediatrics (AAP) as first-line contraceptives. The U.S. Medical Eligibility Requirements for Contraceptive Use (USMEC) and Centers for Disease Control and Prevention impose no limits on use. The advantages usually prevail over the potential of immediate postpartum use of intrauterine contraceptive devices[7]. The intrauterine contraceptive device (IUCD) made up of copperT380 is an exceedingly effective method to avert pregnancy, and it neither requires any hormonal therapy nor interferes with breastfeeding. Hence, it is deemed safe for all women[8]. According to World Health Organization (WHO), an intrauterine contraceptive device (IUCD) is the safest and most effective method of short-term pregnancy prevention and should be inserted post-delivery[5] instantaneously. As per World Health Organization Medical Eligibility Criteria, it is suggested that IUCD can either be inserted 48 hours following postpartum or after 4 weeks following a child birth[9].

Furthermore, IUCD can be inserted even during caesarian delivery or 10 minutes after placental delivery[9]. The ideal time for family planning is the post-natal period. It could save the family an extra visit to the clinic and planning the family at the same place with the health care provider and provides safe and long-term contraception within the same health facility. Family planning can be discussed with health care providers during pregnancy or during the initiation of labor. The insertion of an immediate postpartum intrauterine contraceptive device involves highly motivated women who are not ready to get pregnant sooner, along with assurance from health care provider[9]. The postpartum intrauterine contraceptive device has proved to be comfortable with fewer side effects[8]. The common complaints of IUCD are expulsion missing threads at short and long-term follow-up[10]. The adverse effects include pain, bleeding, perforation, and expulsion with insertion of the postpartum intrauterine contraceptive device. The interval insertion had a higher expulsion rate[11]. Even though the frequency of missing IUCD threads was high, the expulsion rate was not as much. In contrast, the removal rate due to heavy bleeding, abdominal pain, and vaginal discharge was quite low, and the continuation rate was substantially good for 6 months[12].

Despite providing contraceptive methods to women, there is still a lack of facilitation to provide family planning services among many women post-delivery. Meeting the needs of women during the period of post-pregnancy can aid in reducing maternal and childhood mortality and morbidity. Literature has strongly claimed the safety and convenience of using postpartum intrauterine devices (PPIUDs)[13].

Owing to the increasing population of Pakistan, fertility control has become the most unmet need for the socio-economic growth and welfare of society. To increase contraceptive usage, many educational and motivational activities are needed. Women also have misconceptions regarding this method, and fear of complication is the main cause of its limited use, which can be controlled by proper training of health care providers and women's motivation regarding contraception during the antenatal and intrapartum period. The immediate postpartum period is a good time for women to accept the temporary method and enhance women's continuous motivation. So, the current study was planned.

The aim of the study was to assess the experience of women after immediate postpartum insertion of the intrauterine contraceptive device (PPIUCD).

Patients and Methods

A prospective cross-sectional descriptive study was conducted in Gynaecology and Obstetrics department Unit 1 at Abbasi Shaheed Hospital from February 2019 to September 2019. The Institutional Review Board (IRB) OF Karachi Medical and Dental College was approved.

The sample size was calculated using World health organization (WHO) software" Sample size Determination in Health Studies with a proportion of satisfaction after 6 weeks 91%[12] with a margin of error 5% and 95% confidence interval. The calculated sample size is 126. We included 141 women in our study. All study participants were included through the Non-probability consecutive sampling technique. A total of 141 booked and non-booked women who delivered in

the hospital and received the immediate postpartum intrauterine device (PPIUCD) either post placental, intra cesarean, or within 48 hours of delivery were included in the study. Those women who did not meet the criteria for PPIUCD insertion, i.e., chorioamnionitis, puerperal sepsis, rupture of membranes for >18hours, unresolved postpartum hemorrhage (PPH), and those who were not willing to participate were excluded.

Written consent was taken for postpartum intrauterine device (PPIUCD) insertion. Verbal consent was taken to fill the proforma, which included demographic information, clinical characteristics, and questions related to overall experience about the insertion of PPIUCD. The immediate experience was measured by assessing the pain during and post-insertion period. All participants were further followed at six weeks and 6 months by using a follow-up proforma that collected information about the overall experience, removal rate, any complaints or complications (including abnormal vaginal discharge, cramping, heavy bleeding, infection, displaced, expulsion discomfort during intercourse and desire to continue the method, etc.), In the cases where the women failed to return to the health facility for her follow-up visit, she was contacted by telephone for the follow-up interview for the study purpose. All the enrolled women in the study were followed for 6 months to determine the overall experience, including satisfaction in terms of no complaints, no removal, and continuation without having any problem or complication of PPIUCD. We also kept the record of women who discontinued PPIUCD and their reasons for it. All these women were followed up for six months.

Data was entered and analyzed using SPSS 25.0. Descriptive statistics of all study variables were reported using mean (standard deviation) and frequency (%). The Chi-square test compared study outcomes (Overall experience and removal rate) with other study variables. P-value <0.05 was considered significant.

Results

A total of 141 participants were recruited for the study. The mean age was 27.3 +4.42 years. Out of 141 participants, 119 (84.4%) were of age 30 years or less. Only 21 (14.9%) participants were nulliparous. Most of the participants were booked 111 (78.7%). In most of the studies, participant educational status was showed primary level. More than half of the participants, 77 (54.6%), had a cesarean section. 127 (90.1%) participants have decided IUCD use before the delivery while remaining decided it after the delivery. The timing of device insertion showed that in 77 (54.6%) participant's procedure was performed intra Cesarean. In 48(34%), insertion was done within 10 minutes, and in 16 (11.3%), insertion was performed within 48 hours. Most of the participants did not use any family planning method in the past, while some of them considered condoms as an easy method to avoid pregnancy (Table 1).

All the participants went through the insertion period with ease without having any difficulty or complaints. Only 5 (3.5%) complained of mild pain during the insertion procedure, while no post-procedural complaints were recorded (Table 1).

28 (19.9%) study participants lost to follow-up at 6 months. Out of total 117, 86 (73.5%) and 78 (69.03%) participants had no complaint at 6 weeks, and 6 months respectively, discomfort during intercourse was observed in 14 (11.97%), spotting 5 (4.27%) while during the follow-up period overall incidence of removal of IUCD occurred in 16 (14.08%) participants due to different complains, at 6 month, 5 (4.42%) had complained of bleeding, complain of spotting observed in 12 (10.62%) participants who were almost doubled as compared to the last follow-up, cramping in 5 (4.42%). The complaint of prolongation of the period was found in 2 (1.76%) women (Table 2). There was no reported case of uterine perforation in this study.

Seven (5.98%) of the participants at 6 weeks and 9 (7.96%) at 6 months removed IUCD due to the following reasons, fear/anxiousness was found as a reason for removal in 2 (12.5%), Displacing became reason in 2 (12.5%), and 2 (12.5%) women did this because of heavy menstrual bleeding. At the same time, other reasons were expulsion, abdominal pain, family pressure, bleeding, etc. (Figure 1).

Based on participants' responses, their experience and attitude toward PPIUCD showed that 103 (88.03%) participants had no complaints during intercourse. Overall experience was found satisfactory in 86 (73.5%) participants,, while some had complaintss. 87 (74.4%)

participants were still willing to choose it again as a family planning method, and 87 (74.4%) participants agreed to recommend it to others.

The overall removal rate was compared with age, mode of delivery parity, and device insertion timing. The association was found statistically non-significant between the removal and associated factors with (P>0.05) (Table 3). The association was found statistically significant between mode of delivery and the status of procedural complaints at 6 weeks of follow-up (13.2% vs. 44.9%; P<0.00), women with cesarean section had less frequency of complaints compared with vaginal delivery while at 6 months the association was found statistically non-significant (29.9% vs. 32.6%; P=0.07).

There was no statistical significance observed between overall PPIUCD experience and age, parity, educational status, booking status, mode of delivery parity, and timing of decision and insertion of the device (P>0.05).

Table 1: Descriptive Statistics of Demographic, Clinical Characteristics and Outcomes.

Study variables		Frequency	Percentage
Age groups	30 or less years	119	84.4%
	>30 years	22	15.6%
	Mean+/- SD	27.3+/-4.42	
Parity	0	21	14.9%
	1—3	83	58.9%
	>3	37	26.2%
Booking status	Booked	111	78.7%
	Non-Booked	30	21.3%
Educational status	Illiterate	37	26.2%
	Primary	64	45.4%
	Secondary	29	20.6%
	Matric or higher	11	7.8%
Mode of delivery	Cesarean	77	54.6%
	Vaginal delivery	64	45.4%
Timing of Decision	After Delivery	14	9.9%
	Before Delivery	127	90.1%
Timing of Insertion	Intra Cesarean	77	54.6%
	Within 10 minutes	48	34%
	Within 48 Hours	16	11.3%
Previously family planning method used	Condom	18	12.8%
	Implant(4 Years)	1	0.7%
	Inject	5	3.5%
	IUCD	1	0.7%
	PPIUCD	3	2.1%
Experience During Procedure			
Experience During Insertion	Easy	141	100%
	Difficult	0	0%
Pain during procedure	Mild Pain	5	3.5%
	No Pain	136	96.5%
Post Procedure Complain	Yes	0	0%
	No	141	100%
Follow-up status	Loss to follow-up	24	17%
	Phone	57	40.4%
	Visited Hospital	60	42.6%
Experience Post Procedure			
Immediate experience (n=141)	Satisfactory	136	96.5%
	Not satisfactory	5	3.5%
Satisfied with intercourse at 6 weeks (n=117)	Satisfactory	103	88%
	Not satisfactory	14	12%
Overall experience (n=117)	Satisfactory	86	73.5%
	Not satisfactory	31	26.5%

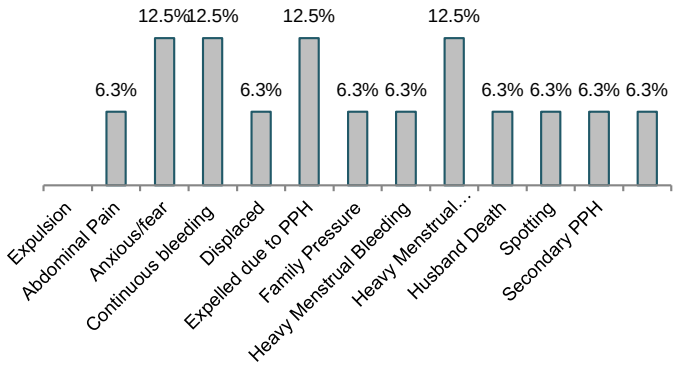

Figure 1: Reason for Removal

Table 2: Distribution of Complications at Different Time Intervals

Complications	At 6 Weeks (n=117)	At 6 Months (n=113)
Loss to follow-up	24(17%)	28(19.9%)
No Complain	86(73.5%)	78(69.03%)
Anxious/fear	2(1.71%)	0(0%)
Irregular Bleeding	7(5.98%)	5(4.42%)
Discomfort during Intercourse	14(11.97%)	0(0%)
Abdominal Pain	1(0.85%)	4(3.53%)
Spotting	5(4.27%)	12(10.62%)
Abnormal Vaginal Discharge	2(1.71%)	2(1.76%)
Cramping	0(0%)	5(4.42%)
Prolonged Heavy periods	0(0%)	2(1.76%)
Removal	7(5.98%)	9(7.96%)
Perforation	0 (0%)	0(0%)
Pregnancy	0 (0%)	0 (0%)

Table 3: Comparison of Outcomes with Study Variables.

Study variables		Overall Experience		P-values	Overall Removal		P-values
		Unsatisfactory	Satisfactory		No	Yes	
Age group	30 or less years	28(27.7%)	73(72.3%)	0.45	104(87.4%)	15(12.6%)	0.27
	More than 30 years	3(18.8%)	13(81.2%)		21(95.5%)	1(4.5%)	
Parity	0	5(27.8%)	13(72.2%)	0.78	17(81%)	4(19%)	0.475
	3-Jan	17(24.3%)	53(75.7%)		75(90.4%)	8(9.6%)	
	>3	9(31%)	20(69%)		33(89.2%)	4(10.8%)	
Mode of delivery	C/Section	15(22.1%)	53(77.9%)	0.20	71(82.2%)	6(7.8%)	0.11
	Vaginal delivery	16(32.7%)	33(67.3%)		54(84.4%)	10(15.6%)	
Timing of Insertion	Intra Cesarean	15(22.1%)	53(77.9%)	0.32	71(92.2%)	6(7.8%)	0.13
	Within 10 minutes	10(29.4%)	24(70.6%)		42(87.5%)	6(12.5%)	
	Within 48 Hours	6(40%)	9(60%)		12(75%)	4(25%)	

Discussion

The present study was conducted to assess the experience of PPIUCD insertion in the immediate postpartum period of women delivering in our setup. This study included 141 postpartum subjects. Shekhawat GS et al. reported that counseling had a major effect on women. 88% of participants agreed to PPIUCD post counseling[2], whereas present study results showed that 90.1% of patients had decided to insert PPIUCD before delivery and 9.9% decided after delivery. These results are highly dependent on the decisions made by health care providers for the provision of counseling during the antenatal period. Counseling and counselor are considered a core part of the approval of PPIUCD. In the current study, more than half of women, 77 (54.6%), had intra cesarean insertion, 48 (34%) had the timing of insertion of the device within 10 minutes of placental delivery, while only 16 (11.3%) had insertion after 10 minutes and before 48 hours. However, in another study, 63% of women underwent intra-cesarean insertion, and 38% underwent post placental insertion[2]. Lerma et al. did not favor previous guidance on the timing of insertion of PPIUD. In his study, almost 16% of women underwent post placental insertion (≤10 minutes), whereas the rest underwent immediate (>10 minutes) insertion of PPIUD[13]. In a local study, it was established that there was no significant difference in interval IUCD and PPIUCD[14].

The present study showed that most (96.5%) of the women had painless and easy insertion, and only 3.5% had mild pain during insertion. Literature showed that 5.7% of women had difficult insertion, and 20% had pain and discomfort during insertion. In our study, no post-procedure complaint was found at the time of discharge. In two studies in 2016 and 2019 majority of the women had no complaints at discharge time, and the satisfaction rate of PPIUCD was around 97%[2,15]. Common complications observed in the present study during the follow-up period were irregular bleeding, spotting, and discomfort during intercourse, abnormal vaginal discharge, abdominal pain, heavy menstrual bleeding, cramps, expulsion, and displaced IUCD. Studies have shown heavy menstrual bleeding in 5.5%-27.2% of patients. In a study in Lahore, menstrual disturbances were found in 19.45, while in a study in India, irregular bleeding was found in 10.5%.

In our study, irregular heavy bleeding was found only in 5.98% at 6weeks and 4.4% at 6 months. These menstrual disturbances were settled after symptomatic treatment in a few patients, while 4 out of 16 removal were due to heavy and irregular bleeding. The infection rate was found 5%[1], 1.75%[16], and 0%[3] in different studies, while it was 1.76% in our study. Discomfort during intercourse was found in 11.97% at 6 weeks follow up, but this problem was resolved after shortening the thread.

In the current study; the Overall removal rate was found during the 6 months of follow up period was 16/113 (14.2%) while initially at 6 weeks, only 7 (5.98%) participants removed the device due to complaints. At 6 months, the removal rate was observed in 9 (7.93%) study participants. The most common reasons for removal in the present study are fear, displacement, heavy menstrual bleeding. Other than that, some of them removed IUCD due to family pressure, bleeding, pain, and husband death. While comparing it was shown that removal rate was slightly higher in young women as compared to the older (12.6% vs. 4.5%), in vaginal delivery, more chances to have removal of IUCD as compared to women who underwent cesarean section (15.6% vs. 7.8%), there is a higher prevalence of removal in nulliparous women more removal incidence happened in women whom insertion time was within 48 hours as compared to intra cesarean and 10 minutes timing of insertion.

Few other studies reported menstrual irregularities, sexual discomfort, and abdominal cramping as the reasons for removing IUCD[17,18]. Another study reported 10% bleeding in women, which is one reasonasons for removal[19]. Our study findings disagree with Hooda et al., study, where a higher removal rate is reported[20]. Few studies have reported expulsion as the reason for removal[6,20]. A study reported expulsion rates of various intrauterine contraceptive devices (IUCDs) like Nova-T380, Multiload 375, and Copper-T380A as 13%, 5%, and 15% by the end of the first year.

In contrast, another study showed that 15%participants had their IUDs removed before six months due to complete or partial expulsion[21,22]. Removal rates due to expulsion for postpartum IUD vary by placement time, mode of delivery, and type of IUCD. This systematic review recommended research with particular diagnostic criteria for types of expulsions, the timing of expulsion (complete and partial), type of IUD, insertion techniques, level of familiarity with health care providers, and breastfeeding status[23]. There was no case of uterine perforation, and unplanned pregnancy was found, and the same was reported in a study in India 2019[24] and 2016[16]. In the present study, the overall experience was found satisfactory in 73.5% of participants at 6 months which is lower than the study in 2017, where the satisfaction rate was 92.7% at 6 months[25].

The study showed that all the women found postpartum intrauterine insertion easy, and the majority had to experience painless insertion. Most women had no complaints at 6 weeks and 6 months intervals. Very few women had experienced discomfort and had it removed during the follow-up. Women had removed the device because of fear, the device being displaced, and heavy menstrual bleeding.

This study has a short-term follow-up period. Furthermore, studies with a larger sample size should be conducted, involving long-term follow-up assessments. So that findings can be generalized throughout the community. Expanding access to PPIUDs can provide an opportunity to address the high percentage of births with short pregnancy intervals and improve maternal-fetal outcomes. The future consequences of PPIUD need to be examined. Active action at an individual, community, and institutional level is needed, and policymakers should play their part in delivering effective, affordable, and easily available contraceptive methods to raise the health status of mother and child.

Conclusion

Overall, PPIUCD provided a satisfactory experience to the majority of the women, and they preferred to choose again.

Conflict of Interest

Authors have no conflict of interest and no grant/funding from any organization.

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