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ORIGINAL RESEARCH ARTICLE

**CONTINUATION RATE OF IMMEDIATE POSTPARTUM INSERTION OF INTRAUTERINE CONTRACEPTIVE DEVICE.**Sadia Baig<sup>1</sup>, Saima Khattak<sup>2\*</sup>**ABSTRACT**

**BACKGROUND:** Contraception methods are designed to prevent undesired pregnancies on a temporary or permanent basis. An intrauterine contraceptive device such as Cu-T-380A offers contraception for a duration of up to 10 years. Traditionally, the initiation of postpartum birth control has been postponed until the 6-week postpartum visit. Women are typically advised to abstain from sexual activity until the 6-week postpartum period as part of their discharge instructions from the hospital. **OBJECTIVE:** To determine the frequency of continuation rate of postpartum insertion of intrauterine contraceptive device in women delivering at Lady Reading Hospital, Peshawar. **STUDY DESIGN & SETTING:** Descriptive study conducted at the Department of Obstetrics and Gynecology, Lady Reading Hospital, Peshawar. **METHODOLOGY:** The study was conducted between September 1, 2021, and February 28, 2022. A total of 104 pregnant women who were counseled for (PPIUCD) insertion during antenatal care or early labor and expressed willingness to have an IUD inserted after delivery were recruited for the study. Participants were followed up at six weeks and six months postpartum. **RESULTS:** The continuation rate of postpartum insertion of the intrauterine contraceptive devices was noted. The age range in this study was from 25 to 40 years with a mean age of 30.836±2.91 years and a mean gestational age was 38.61±1.20weeks. The continuation rate of IUD was observed in 91.3% of patients. **CONCLUSION:** In conclusion, the findings of this study indicate highly satisfactory continuation rates for PPCuIUD at 6 months. The research explores recent developments that have expanded accessibility to all intrauterine devices (IUDs) and provides detailed descriptions of each IUD's features. Despite the notable increase in IUD usage, potential complications related to IUD placement may still arise. Therefore, ongoing updates on strategies to mitigate these IUD-related issues are essential.

**KEYWORDS:** Pregnancy, Postpartum insertion of intrauterine contraceptive device, Continuation rates.

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**INTRODUCTION**

Contraceptive methods are formulated to prevent unintended pregnancy either temporarily or permanently. Initially centered on women's reproductive health, contraception has evolved. Intrauterine contraceptive devices (IUCDs), exemplified by Cu-T-380A, provide a robust contraceptive option lasting up to ten years<sup>1</sup>. Pakistan's contraceptive prevalence rate stands at a low 35%. Approximately half of all women start sexual activity six weeks after giving birth, and women who have cesarean sections may be more likely than their vaginal delivery counterparts to do so sooner<sup>2-4</sup>.

Increasing the spacing between pregnancies by at least 36 months can significantly reduce maternal mortality by 30% and child mortality by 10%<sup>5, 6</sup>. In resource-constrained settings, early initiation of childbearing, coupled with short inter-pregnancy intervals and high fertility rates, contributes significantly to elevated maternal and neonatal mortality and morbidity<sup>6</sup>.

A study conducted at Sobhraj Maternity Hospital found that the continuation rate for postpartum intrauterine contraceptive devices (PPIUCDs) was 90% at six weeks and 84% at

six months. Among the participants, 6% experienced IUCD expulsion, confirmed through ultrasound. Apart from spontaneous expulsion, IUCD removal occurred in 6.6% of women due to irregular heavy bleeding, in 2.1% for personal or social reasons, and 1.3% discontinued IUCD use to pursue planned pregnancy<sup>7</sup>.

The IUCD stands as a reliable contraceptive intervention with various benefits. These include safety, long-acting reversibility, cost-effectiveness, independence from coitus timing, and no interference with breastfeeding. It proves convenient for both the service provider and the patient, negating the necessity for a follow-up visit and the associated expenses. Moreover, it encourages continuity of care by having the same healthcare provider involved in both intrapartum care and contraceptive provision, enhancing patient familiarity and comfort<sup>8,9</sup>. As defined by the WHO, postpartum family planning (PPFP) prioritizes the prevention of unintended and closely spaced pregnancies during the first months following childbirth<sup>9</sup>.

A study conducted by Wasim T, et al. demonstrated an 84.3% continuation rate for the immediate postpartum insertion of intrauterine contraceptive devices<sup>10</sup>. 11. In Pakistan, the burgeoning population growth poses a significant challenge, particularly in light of low literacy rates and a declining contraceptive prevalence rate. To address this issue, there is a lack of prior research investigating the actual continuation rate of PPIUCDs. In response, I have undertaken a study to determine the true continuation rate of PPIUCDs and identify the underlying reasons for discontinuation, including menstrual disturbances, vaginal discharge, lost strings, IUCD expulsion, misplaced IUCD, and discontinuation for planned pregnancy. The professional organizations have recommended Intrauterine Devices (IUDs) as the primary contraceptive choice for sexually active teenagers<sup>11</sup>. The implementation of these new practice recommendations has facilitated easier access to these devices<sup>12</sup>. The study aimed to determine the frequency of continued use of (PPIUCDs) among women delivering at Lady Reading Hospital, Peshawar.

## **MATERIALS AND METHODS**

**Study Design, Settings and Duration:** A descriptive cross-sectional study was carried out in the Department of Obstetrics and

Gynecology at Lady Reading Hospital, Peshawar. The study duration is from September 1, 2021, to February 28, 2022.

**Sample Technique and Sample Size:** A non-probability sampling technique was employed to recruit participants for the study. A sample size of 104 was calculated using WHO sample size software with a 95% confidence level, a 7% margin of error, and an anticipated continuation rate of 84.3% for immediate (PPIUCDs).

## **Participants Criteria (Inclusion and Exclusion)**

The eligible participants for the study included women aged 25 to 40 years with a gestational age of over 36 weeks based on a dating scan and a parity score of 3 or higher. These women had either vaginal or cesarean deliveries, had been counseled about postpartum intrauterine contraceptive device (PPIUCD) insertion during antenatal care or early labor, were willing to have an IUD inserted after delivery, and agreed to participate in the study. Women with primary postpartum hemorrhage (PPH), anemia, premature rupture of membranes for more than 18 hours, obstructed labor, distorted uterine cavity due to fibroids or congenital malformations, or those lost to follow-up were excluded from the study.

## **Ethical Approval and Consent Form:**

The study was accompanied following approval from the hospital ethics and research committee. All applicants were informed about the study objectives and benefits and written informed consent was obtained from each participant.

## **Study Procedure:**

All applicants experienced a thorough evaluation including a detailed medical history routine examinations and standard investigations such as a complete blood count to detect anemia. Essential demographic information such as age gestational age parity and mode of delivery was recorded. Following informed consent and a thorough explanation of the procedure, women underwent immediate postpartum insertion of Copper T 380A, either after vaginal or cesarean delivery, immediately following the expulsion of the placenta. During the follow-up visit, a pelvic examination was conducted to monitor for signs of infection, including foul-smelling greenish-yellow discharge, and to assess the visibility of the device strings, which were trimmed to approximately 2cm beyond the external orifice

of the uterus. If complications arose, the women received the necessary treatment and were reassured about the continuation of the method. In cases where the strings were not visible, attempts were made to retrieve them; if unsuccessful, ultrasound was performed to assess the IUCD's status. If the device was confirmed to be in place, the patient was reassured to continue its use. For participants who did not appear for in-person follow-up, information was collected through telephone inquiries. However, those who neither attended follow-up nor responded to telephone inquiries were excluded from the study. Follow-up assessments were conducted at 6 weeks and 6 months postpartum. Strict adherence to exclusion criteria was maintained to control confounding variables and minimize bias in the study results.

#### DATA ANALYSIS

Data was entered and analyzed with IBM SPSS v.23. Mean $\pm$ SD was calculated for quantitative variables like age and gestational age. Frequencies and percentages were computed for categorical variables like mode of delivery, parity and continuation rate of IUD. Stratification was done with regard to age, gestational age, parity and mode of delivery to see the effect of these variables on continuation rate of IUD. Post stratification chi-square test was applied,  $p \leq 0.05$  was considered statistically significant.

#### RESULTS

A total of 104 female were recruited in this study. The age of female were found between 25-40 years with mean age of  $30.8 \pm 2.9$  years and mean gestational age was  $38.6 \pm 1.2$  weeks. Parity score were categorized into two groups; one 3-4 and  $>4$ , in which 74% and 26% patients observed respectively. C-section was performed in 49% female and vaginal delivery was found in 51% patients. The continuation rate of IUD was found 91.3% (Table 1).

Table 1: Patients distribution based on parity score, mode of delivery, continuation rate of IUD

Parameter	Percentage (Frequency) % (n)
<b>Parity Score</b>	
3-4	74 (77)
$>4$	26 (27)

Mode of Delivery	
Vaginal	51 (53)
C-Section	49 (51)
<b>Continuation Rate of IUD</b>	
Yes	91.3 (95)
No	8.7 (09)

Stratification of continuation rate of IUD with respect to age, gestational age, parity and mode of delivery. Continuation rate of IUD were found 100% in  $>35$  years age group while 90.2% observed in 25-35 years age group with p-value 0.257. Continuation rate of IUD with gestational age also found in 89.2% in gestational age group 36-38 weeks while 100% in  $>39$  weeks of gestational age with 0.114 p-value. Continuation rate of IUD with 3-4 parity score group found 88.3% whereas 100% in  $>4$  parity score group. Continuation rate of IUD observed more in C-section delivery mode female (96.1%) and 86.8% in vaginal delivery mode

Table 2: Stratification of continuation rate of IUD with respect to age, gestational age, parity and mode of delivery

Parameter	Continuation Rate of IUD		P-value
	Yes	No	
<b>Age (Years)</b>			0.257
25-35	90 .2 (83)	9 .8 (9)	
$>35$	10 0 (12)	0 (0)	
<b>Gestational age (weeks)</b>			0.114
36-39	89 .2 (74)	1 0 (89)	
$>39$	10 0 (21)	0 (0)	
<b>Parity</b>	<b>Y</b> <b>es</b>	<b>N</b> <b>o</b>	0.0

3-4	88 .3 (6 8)	1 1. 7 (9 )	63
>4	10 0 (2 7)	0 (0 )	
<b>Mode of Deliv ery</b>	<b>Y es</b>	<b>N o</b>	0.0 92
Vagin al	86 .8 (4 6)	1 3. 2 (7 )	
C- sectio n	96 .1 (4 6)	3. 9 (2 )	

## DISCUSSION

LARC represents one of the oldest and most established methods of pregnancy prevention. Modern intrauterine contraceptive devices (IUCDs) are highly effective, safe, discreet, long-lasting, and reversible contraception methods with minimal adverse effects. Currently recognized as the most cost-effective contraception option, IUCDs offer women the convenience of minimal attention after insertion<sup>13, 14</sup>. Among the most trustworthy, affordable, non-hormonal, and reversible birth control options designed with nursing moms' requirements in mind, intrauterine continuous disc birth control (IUCD) stands out. They don't interfere with breastfeeding and, in certain cases, could even make it last longer. Furthermore, IUCDs have little bearing on the quality of breast milk.

The postpartum period is a time when long-acting reversible contraceptive techniques, primarily PPIUCD, are widely advocated internationally, especially in developing nations. Given that most women start sexual activity six weeks after giving birth, women who have cesarean sections may be able to resume earlier than those who give birth vaginally<sup>15-17</sup>. Postpartum period provides an optimal opportunity to commence contraception, as women are generally more open to the idea during this time. Furthermore, it offers convenience for both patients and healthcare providers. Postpartum insertion of an (IUCD) eliminates the discomfort associated

with interval insertion, and lochia can obscure any bleeding from the procedure<sup>18-20</sup>.

According to a Shukla et al. study, menorrhagia was reported by 27.2% of women after the insertion of a PPIUCD<sup>19</sup>. The Welkovic et al. observed no indications of variations in excessive bleeding or infection in their study on bleeding from postpartum and infection following post-placental IUCD addition.<sup>21</sup> Celen et al. from Turkey reported a cumulative expulsion rate of 11.3% for insertion postpartum of CuT 300B<sup>22</sup>. Thiery et al. of Belgium found that six months after the immediate post-placental implantation, there was a 9.4% expulsion rate. As emphasized in the (UNPOPIN) study, the timing of IUCD insertion in the postpartum period is important, along with counseling and provider training. The timing of insertion is one of these variables that affects the probability of expulsion the most<sup>23</sup>.

A multinational study involving 13 countries investigated pelvic inflammatory disease (PID) associated with IUCD use, reporting a similar infection rate (2.4%) for both immediate and interval insertion, comparable to our study's findings (2.1%). An impartial survey carried out across 27 nations found that although 65% of women wished to postpone getting pregnant again, they were not utilizing any kind of contraception. Remarkably, 39% of women who gave birth in the preceding year stated that their demands for contraception had not been satisfied<sup>14, 15, 20, 24</sup>. In our study, the continuation rate of the IUD was observed in 91.3% of patients. A study by Wasim et al. demonstrated a continuation rate of 84.3% for the immediate postpartum insertion of intrauterine contraceptive devices<sup>10</sup>.

The continuation rate of PPCuIUD observed in our study aligns with the results of a study conducted in Turkey<sup>19</sup>. Despite this, the reported rate is lower than those found in multiple other studies<sup>20, 21</sup>. The lower continuation rate reported in our study compared to prior studies could be related to the study's greater reach, which included a more diversified population outside of Pakistan, as opposed to many earlier investigations, which were limited to a single hospital setting. Nevertheless, our findings demonstrate that a well-structured and implemented PPIUCD program can achieve satisfactory continuation rates on a large scale.

If birth control is postponed until the six-week postpartum checkup, susceptible women are more likely to become pregnant unintentionally and have shorter pregnancy intervals because they are less likely to attend follow-up sessions. Postpartum IUCD insertion offers a significant chance to give safe, highly effective contraception to women who are already enrolled in the healthcare system. PPIUCD has developed as a modern contraceptive device with numerous advantages, including ease of insertion, low interference with breastfeeding, cost-effectiveness, decreased outpatient clinic congestion, and protection against unwanted pregnancies and subsequent abortions<sup>16, 17, 22</sup>.

### CONCLUSION

In conclusion, the study reveals acceptable PPCuIUD continuation rates at six months. PWomen who are already enrolled in the healthcare system have a great chance to receive safe, long-acting, and very effective contraception with PIUCD insertion. PPIUCD has proven its efficacy and reliability as a contraceptive method, offering benefits such as ease of insertion, minimal disruption to breastfeeding, cost-effectiveness, reduced outpatient clinic strain, and protection against unplanned pregnancies and subsequent abortions. The effect of counseling timings for PPIUCD implantation on women's decisions about contraception need more investigation. Women continue to voice serious concerns about the appropriateness and safety of birth control techniques, even though these methods have one of the best patient satisfaction ratings of any kind of contraception.

**ETHICS APPROVAL:** The ERC gave ethical review approval.

**CONSENT TO PARTICIPATE:** written and verbal consent was taken from subjects and next of kin.

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