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COMPARATIVE ANALYSIS OF IMMEDIATE POST PARTUM IUCD VERSUS INTERVAL POST PARTUM IUCD INSERTION

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Abstract

Objective: *This study aimed to compare the safety, efficacy, and acceptability of immediate postpartum intrauterine contraceptive device (PPIUCD) insertion with interval postpartum IUCD insertion.*

Methods: *A prospective comparative study was conducted over six months, involving 150 women equally divided into two groups. Group A (n=75) underwent immediate PPIUCD insertion within 10 minutes of placental expulsion or during cesarean section, while Group B (n=75) received interval IUCD insertion at 6-12 weeks postpartum. The same type of copper-bearing IUCD was used for all participants. Outcomes, including expulsion, infection, menstrual irregularities, continuation rates, and patient satisfaction, were assessed at 6 weeks, 3 months, and 6 months post-insertion.*

Results: *The demographic characteristics of both groups were comparable. The expulsion rate was higher in the immediate group (6.6% vs. 2.6%), but the difference was not statistically significant (p=0.28). Similarly, no significant differences were found in infection rates (4.0% vs. 2.6%, p=0.65) or menstrual irregularities (13.3% vs. 10.6%, p=0.61). No uterine perforations occurred in either group. Continuation rates at 6 months were high and similar between groups (88.0% for immediate vs. 90.6% for interval, p=0.59). Patient satisfaction was also high in both groups (89.3% vs. 93.3%, p=0.37).*

Conclusion: *Both immediate and interval postpartum IUCD insertions are safe, effective, and highly acceptable contraceptive methods with high continuation and satisfaction rates. The marginally higher expulsion rate in the immediate group was not statistically significant. Immediate PPIUCD insertion offers a valuable and convenient option for providing long-acting reversible contraception directly after delivery, supporting its integration into routine postpartum care.*

INTRODUCTION

Intrauterine devices (IUDs) provide highly effective contraception and are commonly placed at an interval postpartum visit typically 4–6 weeks after delivery for women who desire intrauterine contraception. However, the timing of providing postpartum contraception around 6 weeks after delivery is based on historical precedent, not evidence.[1]. In 2021 it was estimated that there

were 164 million women with an unmet need for contraception [2]. Because of this, the Government of India's reproductive, maternal, newborn, child, and adolescent (RMNCH+A) approach has placed a greater emphasis on the acceptability of family planning techniques [3] Counseling about PPIUCD during antenatal care (ANC), spousal approval, having more than one child, and short-interval pregnancy favored the use of IPPIUCD.[4]. The intrauterine contraceptive devices, along with contraceptive implants are the best choices among different birth control methods, which result in the highest satisfaction among family planning users. Literature based evidence favors the effectiveness and safety of the methods. Once the method is reversed, even after long-term use, the be net is that the fertility returns to normal easily and rapidly. By using these methods of contraception for one year, their rst-year failure rate is about 0.8% with copper containing devices and 0.2% with hormone containing (levonorgestrel) devices [,5]. One of the easiest and commonest type of long-acting reversible birth control contraceptive method is IUCD [6,7]. Now a days, mostly women like the PPIUCD because its role has been established and it is very convenient to use as it requires small and little action as soon as it is inserted in its actual place. It also has numerous be nets. A family planning method which delivers reversibe and cost-effective contraceptive need in the hospital delivery setting is the immediate PPIUCD [1,4].

Methodology:

This prospective comparative study was conducted over a period of six months in the Department of Obstetrics and Gynecology. The study aimed to compare the outcomes of immediate postpartum intrauterine contraceptive device (IUCD) insertion with interval postpartum IUCD insertion. A total of 150 women were enrolled and divided equally into two groups of 75 each. Group A included women who had an IUCD inserted immediately after delivery (within 10 minutes of placental expulsion or during cesarean section), while Group B comprised women who had the IUCD inserted at an interval of 6–12 weeks postpartum.

Eligible participants were women aged 18–45 years with singleton pregnancies who had either a normal vaginal delivery or a cesarean section, were medically fit, and willing to participate and follow up for six months. Women with uterine anomalies, active pelvic infection, postpartum hemorrhage, or known contraindications to IUCD use were excluded. Written informed consent was obtained from all participants prior to recruitment. Consecutive eligible women were selected until the desired sample size was achieved.

All IUCD insertions were performed by trained obstetricians or midwives under aseptic conditions using a standard technique. In the immediate postpartum group, the IUCD was placed at the uterine fundus either manually or with forceps after placental delivery in vaginal births or during uterine closure in cesarean sections. In the interval group, insertion was performed at the family planning clinic using a conventional technique after confirming the absence of pregnancy or infection. The same type of copper-bearing IUCD (Copper T 380A) was used for all participants to maintain uniformity.

Data were collected using a structured proforma that included demographic details, obstetric history, and clinical findings. Participants were followed up at 6 weeks, 3 months, and 6 months post-insertion to assess for expulsion, continuation, infection, uterine perforation, menstrual irregularities, or other complications. Patient satisfaction and willingness to continue IUCD use were also recorded at the final follow-up. Any suspected expulsions were confirmed by clinical examination or ultrasound.

The collected data were analyzed using SPSS software. Continuous variables were expressed as mean ± standard deviation, while categorical variables were presented as frequencies and percentages. The chi-square test was applied to compare categorical outcomes such as expulsion and infection rates between the two groups, while the independent sample t-test was used for continuous variables. A p-value of less than 0.05 was considered statistically significant. Logistic regression analysis was applied to adjust for

possible confounders such as age, parity, and mode of delivery.

Ethical approval for the study was obtained from the Institutional Review Board, and all ethical standards were strictly followed. Confidentiality of participants' data was maintained throughout the study, and participants were informed of their right to withdraw at any stage without any impact on their clinical care. All complications or adverse effects were managed promptly according to hospital protocol.

A total of 150 women were included in this study, divided equally into two groups: **Group A (Immediate Postpartum IUCD insertion)** and **Group B (Interval Postpartum IUCD insertion)**. The mean age of participants in Group A was **27.8 ± 4.2 years**, while in Group B it was **28.5 ± 4.6 years**. The majority of women in both groups were multiparous. No statistically significant difference was found between both groups regarding age, parity, or mode of delivery ($p>0.05$).

Results

Table 1: Demographic Characteristics of Participants (n=150)

Variable	Group A (Immediate, n=75)	Group B (Interval, n=75)	p-value
Mean Age (years)	27.8 ± 4.2	28.5 ± 4.6	0.32
Parity (mean)	2.3 ± 1.1	2.4 ± 1.0	0.58
Mode of Delivery (Cesarean/Vaginal)	34/41	32/43	0.74

During the 6-month follow-up period, **IUCD expulsion** was observed in **6.6**% of cases in Group A compared to **2.6**% in Group B, though the difference was not statistically significant ($p=0.28$). **Infection** occurred in 4.0% of Group A and 2.6% of Group B participants ($p=0.65$). No cases of **uterine perforation** were recorded in either group.

Table 2: Post-Insertion Complications (n=150)

Complication	Group A (Immediate)	Group B (Interval)	p-value
Expulsion	5 (6.6%)	2 (2.6%)	0.28
Infection	3 (4.0%)	2 (2.6%)	0.65
Perforation	0 (0%)	0 (0%)	—
Menstrual Irregularities	10 (13.3%)	8 (10.6%)	0.61

Continuation rates at 6 months were high in both groups: **88.0**% in Group A and **90.6**% in Group B. **Patient satisfaction** was slightly higher in the interval group (93.3%) compared to the immediate group (89.3%), but the difference was not significant ($p>0.05$).

Table 3: Continuation and Satisfaction Rates (n=150)

Outcome	Group A (Immediate)	Group B (Interval)	p-value
Continuation at 6 months	66 (88.0%)	68 (90.6%)	0.59
Patient Satisfaction	67 (89.3%)	70 (93.3%)	0.37

Overall, both **immediate postpartum** and **interval IUCD insertions** were found to be safe, effective, and acceptable methods of contraception. There was no statistically significant difference between the two groups in terms of expulsion, infection, or satisfaction rates. Immediate postpartum insertion offered the advantage of convenience and early contraception without affecting safety outcomes.

Discussion:

The present study demonstrated that both immediate postpartum intrauterine contraceptive device (PPIUCD) and interval IUCD insertions are safe, effective, and well-tolerated methods of

contraception, exhibiting comparable continuation and satisfaction rates. Although the expulsion rate was marginally higher in the immediate group, the difference was not statistically significant. These findings align with earlier studies that emphasized the convenience, safety, and early contraceptive protection associated with PPIUCD insertion, supporting its integration into routine obstetric practice for effective long-term family planning..

Our findings were consistent with previous research reporting no statistically significant difference between PPIUCD and interval IUCD groups in terms of pelvic infection and expulsion rates. In both studies, slightly higher expulsion and infection were observed in the PPIUCD group, but the differences were insignificant ($p>0.05$), confirming comparable safety and efficacy between both insertion timings.[9]

However, our results differed from certain studies where the expulsion rate was higher in the interval group compared to the postpartum group. In our study, the expulsion rate was 6.6% in the postpartum group and 2.6% in the interval group, whereas in the comparative study, expulsion was nil in the postpartum group and 5.95% in the interval group.[10]

Similarly, our findings were not in accordance with another study that reported a higher continuation and satisfaction rate in the PPIUCD group (87.5%) compared to the interval group, along with fewer complications such as pain, pelvic inflammatory disease, bleeding, and expulsion. Conversely, in our study, the interval IUCD group demonstrated slightly higher continuation (90.6%) and satisfaction (93.3%) rates than the immediate postpartum group (88.0% and 89.3%).[11]

Furthermore, our results indicated that expulsion (6.6% vs. 2.6%), infection (4.0% vs. 2.6%), and menstrual irregularities (13.3% vs. 10.6%) were somewhat higher in the immediate postpartum IUCD group, though the differences were statistically insignificant ($p>0.05$). Therefore, our findings were not in accordance with the referenced study, which reported lower rates of these complications in PPIUCD users.[12]

In summary, our results (continuation rate: 88.0% for PPIUCD vs. 90.6% for interval; expulsion: 6.6% vs. 2.6%) are consistent with another comparative study demonstrating slightly higher expulsion and continuation rates in the postpartum group, yet with no significant difference between both groups in terms of complications and removals.[13\]

Conclusion:

Based on this prospective comparative study, both immediate and interval postpartum IUCD insertions are safe, effective, and highly acceptable contraceptive methods, demonstrating high continuation and satisfaction rates with no statistically significant differences in complications such as expulsion, infection, or menstrual irregularities. Although the immediate postpartum group had a marginally higher expulsion rate, the overall safety profile and efficacy were comparable to interval insertion. Therefore, immediate PPIUCD presents a valuable and convenient option for providing long-acting, reversible contraception right after delivery, supporting its integration into routine postpartum care to meet the critical need for early and reliable family planning.

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