

COMPARISON OF SATISFACTION AND OUTCOME OF PPIUCD AND INTERVAL IUCD AT A TERTIARY CARE CENTER IN WESTERN RAJASTHAN

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ABSTRACT

Objectives: A prospective study is to compare satisfaction and outcome of post-placental intrauterine device (PPIUCD) and interval intrauterine device (IUCD) at a tertiary care center in western Rajasthan.

Methods: This is an observational study on 150 women of reproductive age group (19–45 years) who had been inserted with copper-T 380A in postpartum period and within 6 weeks of delivery between July 21 and June 22, done at department of Obstetrics and Gynaecology, Dr. S. N. Medical College, Jodhpur, Rajasthan, India. Women were categorized into Group A (postpartum IUCD) and Group B (interval IUCD). In Group A, the Cu-T-380-A was inserted intrauterine in postpartum period. In group B, CuT-380-A was inserted after 4–6 weeks of delivery by withdrawal technique.

Results: The risk of other complications such as bleeding, pain in lower abdomen, and infection is relatively high in interval IUCD insertion as compared to PPIUCD insertion ($p > 0.05$). The removal rate for bleeding and/or pain was found to be lower in PPIUCD group. Expulsion rate for group A (PPIUCD) was 6% and 2.66% in group B ($p = 0.257$). Of total 13 removal, in group A, maximum 9 (69.23%) were removed at 6 months and 4 (30.77%) were removed at 6 weeks. Of total 16 removal, in group B, 13 (81.25%) were removed at 6 months and 3 (18.75%) were removed at 6 weeks. (0.752). Satisfaction rate for group A (PPIUCD) was 88.67% and 88% in group B.

Conclusion: PPIUCD insertion is equally effective and safe method of contraception as interval IUCD insertion with lower incidence of side effects.

Keywords: PPIUCD, Interval IUCD, Satisfaction.

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INTRODUCTION

Family planning can avert more than 30% of maternal mortality and 10% of child mortality if couples spaced their pregnancies more than 2 years apart. In India, 61% of births occur at intervals that are shorter than the recommended birth-to-birth interval of 36 months. Only 26% of women are using any method of family planning during the 1st-year postpartum [1].

An intrauterine device (IUCD) is a long-acting reversible contraceptive containing either copper or levonorgestrel, which is inserted into the uterus. It is the most effective type of reversible birth control [2]. With the increased number of institutional deliveries due to the provision of Janani Suraksha Yojana – a cash transfer scheme, there is increased access to the pregnant women for promoting family planning services. Furthermore, in the immediate postpartum period, the insertion of IUCD is convenient and these women are highly motivated. The post-placental IUCD (PPIUCD) insertion is particularly suitable for our country where even trained paramedical personnel can insert the Cu T and delivery is the only time these patients come in contact with the hospital.

PPIUCD insertion is the insertion of an IUCD in the endometrial cavity shortly after the delivery of placenta. It is termed as immediate when inserted within 10 min of delivery of placenta or early postpartum when inserted within < 48 h after delivery. Interval IUCD can be inserted at any time during the menstrual cycle or after 6 weeks of delivery (interval IUCD), best time to insert interval IUCD is 2–3 days after period is over as cervix becomes softer and dilated to make the procedure easy [3]. The expulsion rate is lower for immediate post-placental compared with early postpartum insertion and is also lower when skilled health-care providers insert the IUCD [4]. Post-placental insertion has an expulsion rate ranging from 6% to 20% for T-shaped

IUCDs over 1 year, whereas the expulsion rate associated with interval insertion of T-shaped IUCD is approximately 1–4.5% in the 1st year [5,6]. There have been many misconceptions over IUCD use. Recent research studies have proven the safety of IUCDs and cleared the misconceptions.

Aim

A prospective study is to compare satisfaction and outcome of PPIUCD and interval IUCD at a tertiary care center in western Rajasthan.

METHODS

This was an observational study on 150 women of reproductive age group (19–45 years) who had been inserted with copper-T 380A in postpartum period and within 6 weeks of delivery between July 21 and June 22, done at department of Obstetrics and Gynaecology, Dr. S. N. Medical College, Jodhpur, Rajasthan, India. Women were categorized into Group A (postpartum IUCD) and Group B (Interval IUCD). In Group A, the Cu-T-380-A was inserted intrauterine in postpartum period. In group B, CuT-380-A was inserted after 4–6 weeks of delivery by withdrawal technique. Those women who discontinued the IUCD due to reason other than complications and dissatisfaction were excluded from study.

- PPIUCD: PPIUCD is insertion of IUCD within 48 h of delivery
- Interval IUCD: Interval IUCD is insertion of IUCD any time after 6-week postpartum.

Expulsion rate

$$\frac{\text{No. of womens in whom IUCD expected out spontaneously from the uterus}}{\text{Total No. of women who inserted IUCD}} \times 100$$

Discontinuation rate

$$\frac{\text{No. of womens who removed IUCD within 6 months of insertion}}{\text{Total No. of women who inserted IUCD}} \times 100$$

Satisfaction rate

$$\frac{\text{No. of womens who satisfafied with IUCD}}{\text{Total No. of women who inserted IUCD}} \times 100$$

Women were scheduled for examination at 6 weeks and 6-month post-insertion. At each visit of the IUCD recipient, physical and pelvic examination was done to confirm the presence of IUCD to check complications such as pain abdomen, vaginal discharge, bleeding, and expulsion. A follow-up card was given to fill the details of complications faced by the patients after IUCD insertion and whether they were satisfied IUCD insertion. All complication was managed as per standard protocol and was recorded in proforma for analysis.

The study was initiated after obtaining ethical approval from the medical college. Informed consent was obtained from the study subjects.

Statistical analysis

The data collected during the study was compiled using a Microsoft Excel spreadsheet and analyzed statistically using SPSS 22.0 software package (SPSS Inc., Chicago, IL, USA). The qualitative data were expressed in numbers and percentages for categorical variables and the quantitative data were expressed as mean and standard deviations for continuous variables. The difference in proportion was analyzed using Chi-square test. All results were presented in the form of tables and graphs. A $p < 0.05$ was considered as statistically significant.

RESULTS

Majority of the subjects were 21–25 years age in group A (47.33%) and group B (50%) and mean age in group A was 25.20 ± 4.21 years and in group B, it was 26.58 ± 5.33 years. ($p = 0.491$). 68.67% subjects in group A were rural and 66% were rural in group B. 89.33% subjects in group A were housewife and in group B, 92.67% were housewife (Table 1).

In majority of the subjects, 45.33% were studied up to primary school in group A and group B 34% up to high school whereas minimum were postgraduate in group A (2.67%) and group B (3.33%) and the difference between the two groups was found statistically insignificant ($p = 0.175$) (Fig. 1).

After 6 weeks of IUCD insertion, in our study 4%, 4.67% subjects in group A had abdominal pain and irregular bleeding, whereas in group B, 6.67% and 7.33% were having abdominal pain and irregular bleeding after 6 weeks of IUCD insertion. No subject in group A had developed menorrhagia and vaginal discharge whereas in group B, 1.33% were developed menorrhagia and vaginal discharge after 6 weeks of IUCD insertion ($p > 0.05$). 24% subject in group A had missing string on per vaginum (PV) examination whereas in group B, 14.67% had missing string. Here, thread not seen includes those expelled and those removed IUCD. Missed string was calculated by deducing those expelled and those removed from thread not seen. Here, USG is done for those who had thread not seen.

8.67% subject in group A had expulsion whereas in group B, 2% had expulsion after 6 weeks of IUCD insertion ($p = 0.021^*$). USG was done to see the position of IUCD. X-ray abdomen AP and lateral view were taken to rule out perforation. There was no case of uterine perforation during study period (Table 2).

At 6-month follow-up, in our study, 2% subjects in group A had abdominal pain, 4.67% had developed menorrhagia, 6.67% had irregular bleeding, 3.33% had vaginal discharge, whereas in group B,

Table 1: Sociodemography of study subjects

Age distribution (Years)	Group A (PPIUCD)		Group B (INTERVAL IUCD)		p-value
	n	(%)	n	(%)	
≤20	21	14.00	11	7.73	0.491
21–25	71	47.33	75	50.00	
26–30	41	27.33	31	20.67	
31–35	14	9.34	23	15.33	
>35	3	2.00	10	6.67	
Residence					0.712
Rural	103	68.67	99	66.00	
Urban	47	31.33	51	34.00	
Occupation					0.420
Employed	16	10.67	11	7.33	
Housewife	134	89.33	139	92.67	

Table 2: Variables at 6-week follow-up

Variables	Group A		Group B		p-value
	n	(%)	n	(%)	
Abdominal pain	6	4.0	10	6.67	0.441
Menorrhagia	0	0.0	2	1.33	1.000
Irregular bleeding	7	4.67	11	7.33	0.466
Vaginal discharge	0	0.0	2	1.33	0.478
Missing string	36	24.00	22	14.67	0.057
Expulsion	13	8.67	3	2.00	0.021*

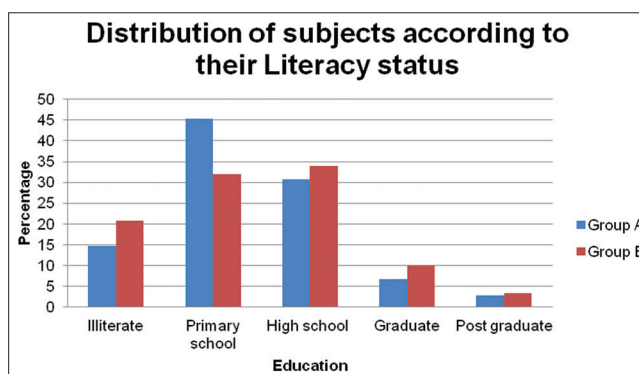


Fig. 1: Literacy status of study subjects

10% were having abdominal pain, 7.33% were developed menorrhagia, 14% had irregular bleeding, and 6.00% had vaginal discharge after 6 months of IUCD insertion. The difference between the two groups abdominal pain was found statistically significant. ($p = 0.014^*$). 11.33% subject in group A had missing string on PV examination whereas in group B, 16.67% had missing string, 6.00% subject in group A had expulsion whereas in group B, and 2.67% had expulsion after 6 months of IUCD insertion, and the difference between the two groups was found statistically insignificant ($p = 0.257$) (Table 3).

In group A, out of total 13 removal, maximum 9 (69.23%) were removed at 6 months whereas minimum 4 (30.77%) were removed at 6 weeks.

In group B, out of total 16 removal, 13 (81.25%) subject had removal at 6 months whereas 3 (18.75%) had removal after 6 weeks of IUCD insertion.

The difference between the two groups was found statistically insignificant ($p = 0.752$) (Fig. 2).

88.67% subject in group A and 88% in group B were satisfied with IUCD use and the difference between the two groups was found statistically insignificant ($p = 1.000$) (Table 4).

Table 3: Variables at 6-month follow-up

Variables	Group A		Group B		p-value
	n	(%)	n	(%)	
Abdominal pain	3	2.00	15	10.0	0.014*
Menorrhagia	7	4.67	11	7.33	0.466
Irregular bleeding	10	6.67	21	14.00	0.058
Vaginal discharge	5	3.33	9	6.00	0.412
Missing string	17	11.33	25	16.67	0.244
Expulsion	9	6.00	4	2.67	0.257

Table 4: Distribution of subjects according to their satisfaction

Satisfaction	Group A		Group B	
	n	(%)	n	(%)
Yes	133	88.67	132	88.0
No	17	11.33	18	12.0
Total	150	100.0	150	100.0
p value	1.000			

In group A, out of total 13 cases of removal, maximum 6 (46.15%) had bleeding PV followed by 3 (23.08%) social reasons whereas minimum 2 (15.38%) was due to pain abdomen and vaginal discharge.

In group B, out of total 16 discontinuation, maximum 10 (62.50%) subject had bleeding PV followed by pain abdomen (18.75%) whereas minimum 1 (6.25%) had opted for permanent sterilization.

The difference between the two groups was found statistically insignificant (p=0.752) (Fig. 3).

DISCUSSION

In our study, majority of the subjects were 21–25 years age in group A (47.33%) and group B (50%) whereas minimum were >35 years age in group A (2%) and group B (6.67%). The mean age in group A was 25.20±4.21 years and in group B, it was 26.58±5.33 years (p=0.491). Similarly reported by Khurshid *et al.* (2020) [7] show that IUCD usage as a method of contraception is more among young females.

In our study, 68.67% subjects in group A were rural whereas in group B, 66% were rural (p=0.712). During this study, it was seen that acceptance of IUCD was higher among the rural women as compared to urban women. On contrary, Jairaj *et al.* (2016) [8] found that majority were from urban area (79.75%).

In our study, majority of the subjects 45.33% were educated up to primary school in group A and group B (p=0.175). Similarly reported by Jairaj *et al.* (2016) [8] show that educated woman understood the risk of short interpregnancy interval pregnancies and were willing to space out pregnancy using IUCD.

In our study, 24% subject in group A had missing string on PV examination whereas in group B, 14.67% had missing string after 6 weeks of IUCD insertion (p=0.057); also, Lucksom *et al.* (2014) [9] observed similar trend.

In our study, 8.67% subject in group A had expulsion whereas in group B, 2% had expulsion after 6 weeks of IUCD insertion (p=0.021*) similarly found by Khurshid *et al.* (2020) [7].

In our study, 2% subjects in group A had abdominal pain, 4.67% had developed menorrhagia, 6.67% had irregular bleeding, 3.33% had vaginal discharge, whereas in group B, 10% were having abdominal pain, 7.33% were developed menorrhagia, 14% had irregular bleeding, and 6.00% had vaginal discharge after 6 months of IUCD insertion (p=0.014*). Similarly, in Bano *et al.* (2020), [10] pain, PID, bleeding, and

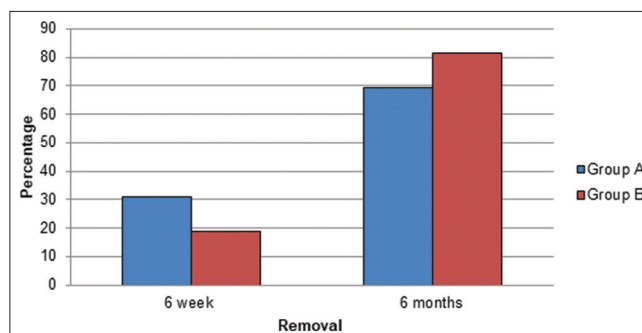


Fig. 2: According to their removal intrauterine device

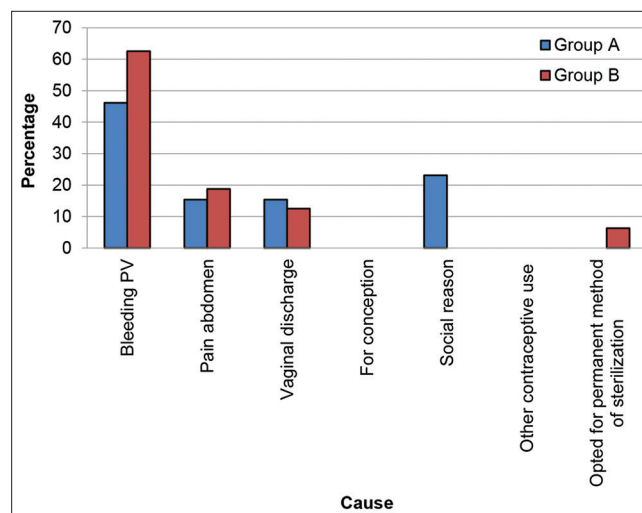


Fig. 3: According to their reason for discontinuation of intrauterine device over 6-month follow-up

expulsion of IUCD were more prevalent with interval IUCD (group B) than PPIUCD (group A) patients.

In our study, 11.33% subject in group A had missing string on PV examination whereas in group B, 16.67% had missing string after 6 months of IUCD insertion (p=0.244), similarly reported by Lucksom *et al.* (2014) [9].

In our study, expulsion rate for group A (PPIUCD) was 6% whereas group B (interval) was 2.66% (p=0.257), also reported by Khurshid *et al.* (2020) [7] and Averbach *et al.* (2020) [11].

In our study, removal/discontinuation rate for group A (PPIUCD) was 8.66% whereas group B (interval) was 10.66% (p=0.752), similarly reported by Agarwal *et al.* (2022) [12].

In our study, in group A, out of total 13 maximum, 6 (46.15%) had bleeding PV followed by 3 (23.08%) social reason whereas minimum 2 (15.38%) due to pain abdomen and vaginal discharge. In group B, out of total 16 discontinuation, maximum 10 (62.50%) subject had bleeding PV followed by pain abdomen (18.75%) whereas minimum 1 (6.25%) had opted for permanent sterilization. (p=0.752), also similarly reported by Jairaj *et al.* (2016) [8]. Common causes of PPIUCD removal were social.

In our study, 88.67% subject in group A and 88% in group B were satisfied with IUCD use and the difference between the two groups was found statistically insignificant (p=1.000). Satisfaction rate for group A (PPIUCD) was 88.66% whereas group B (interval) was 88%, similarly reported by Agarwal *et al.* (2022) [12] and Bano *et al.* (2020) [10].

CONCLUSION

In conclusion, PPIUCD insertion is equally effective and safe method of contraception as interval IUCD insertion with lower incidence of side effects.

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AUTHORS' CONTRIBUTION

All the authors have contributed equally.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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