

# A Comparative study of early postpartum IUCD insertion to interval IUCD insertion at Tertiary Care Centre

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## Abstract

**Background:** A Comparative study of early postpartum IUCD insertion to interval IUCD insertion at Tertiary Care Centre.

**Methods:** This prospective study was conducted among 100 women at tertiary care centre, Haldwani, Nainital. Patients were divided in to two groups. Group A (n=50)-post placental insertion within 10 minutes of delivery of placenta. Group B (n=50)-Interval insertion after 6 weeks of delivery. Both groups were compared in terms of pain abdomen, bleeding, missing thread, expulsion, infection, UTI, perforation, pregnancy immediately after insertion, after 6 weeks and after 6 months.

**Result:** At the time of insertion there was more difficulty in insertion and cramps in interval group than post placental group (14% vs 4% and 24% vs 12%). At the end of 6 months lower abdominal pain and excessive bleeding less in post placental than interval period (5.12% vs 11.90% and 5.12% vs 14.28%). There was no case of perforation or pregnancy in both the groups. There were less cases of missing thread, vaginal discharge, UTI and removal rate in post placental group as compare to interval group (2.56% vs 9.52%, 7.69% vs 14.28%, 5.12% vs 9.52% and 5.12% vs 11.90%). Expulsion rate was more in post placental group (2.56% vs 0%). At the end of 6 month continuation rate was more in post placental group than interval group (92.30% vs 88.09%)

**Conclusion:** Post placental IUCD is thus found to be more effective, safe and better mean of contraception when compared with Interval period.

**Keywords:** Post placental IUCD insertion, Interval IUCD Insertion.

## 1. Introduction

India is the second most populated country in the world with nearly a fifth of the world's Population. According to 2017 revision of the world's population prospects [1], the population stood at 1,324,171,354 with a birth rate of 19.3 births/1000 population (2016 EST). India is projected to be the world's most populous country by the year 2022 [2], surpassing the population of China. Some IUCDs such as CuT 380A (UN 1997) confer contraceptive protection similarity that is achieved with tubal sterilization [3]. The IUCDS are suitable for lactating mothers as there is no effect on quality and components of breast milk. The IUD is a highly effective form of long term reversible contraception, with an associated failure rate of less than 1% in the first year of use [4]. As per international study sponsored by the WHO, in the long term the annual failure

rate was 0.4% or less, and the average cumulative failure rate over the course of 12 years was 2.2%, which is comparable to that of tubal sterilization [5]. Women's fertility returns immediately after an IUD is removed. [6]

## 2. Methods

This prospective study was conducted among 100 women in the department of Obstetrics and Gynaecology at Govt. Medical College Haldwani, from November 2015 to April 2018 after getting clearance from ethical committee. After informed consent from the patients who met the eligibility criteria were divided in to two groups. Group A (n=50) with IUCD (Cu T 380 A) insertion in early post partum period and Group B (n=50) interval IUCD (Cu T 380 A) insertion after six weeks of delivery. Both the groups were followed till six months post insertion and

were compared regarding early and late complications, continuation rates and expulsion rates.

**2.1 Inclusion criteria**

1) Female willing for CUT insertion as a method of contraception, able and willing to give consent for participation in study and subsequent follow ups.

2) Females in age group 20-40 years

**2.2 Exclusion Criteria:**

1) For postpartum cases:

- Patient’s refusal
- Severe anemia (Hb < 7 gm %)
- PROM (>18 hrs)
- Unresolved PPH
- Extensive genital trauma
- Coagulopathies
- Distorted uterine cavity
- Case with medical disorder during pregnancy
- Features of chorioamnionitis
- Suspected puerperal sepsis
- Post partum endometritis
- Current PID gonorrhea or Chlamydia
- Pelvic T B, AIDS patients not on ARV & not clinically well

2) For interval cases:

- Pregnancy.
- Congenital malformation of uterus.
- Any bleeding disorder or unknown cause of vaginal bleeding.
- Pelvic inflammatory disease.

In group-A IUCD was introduced with help of Kelly’s forceps within 10 minutes of delivery of placenta and within 48 hr of vaginal delivery and in group-B, IUCD was introduced using ‘No touch technique’. They were asked to follow up after six weeks and then after six months. In every visit, pelvic examination was done to check for any abnormality. The immediate and late complications, expulsion and continuation rates were compared in the two groups.

**2.3 Statistical analysis**

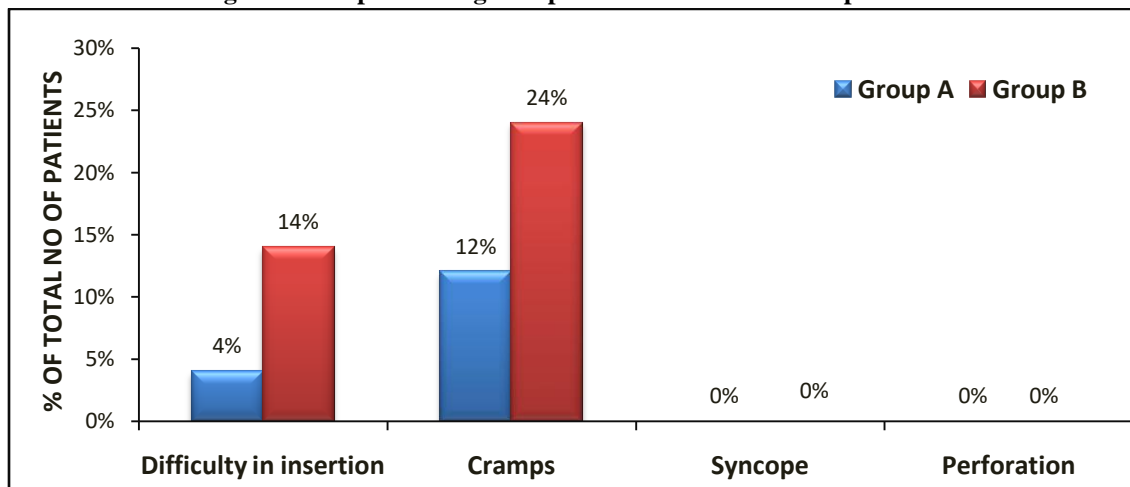
Categorical variables were presented in number and percentage (%). Qualitative variables were compared using Chi-Square test/Fisher exact test. A p value of <0.05 was considered statistically significant. The data was entered in MS EXCEL spreadsheet and analysis was done using Statistical Package for Social Sciences (SPSS) version 21.0.

**3. Results**

**Table 1: Comparison of immediate complications**

Immediate Complication	Group A	Group B	P value
	N=50	N=50	
Difficulty in insertion	2(4%)	7(14%)	0.159
Cramps	6(12%)	12(24%)	0.193
Syncope	0(0%)	0(0%)	-
Perforation	0(0%)	0(0%)	-

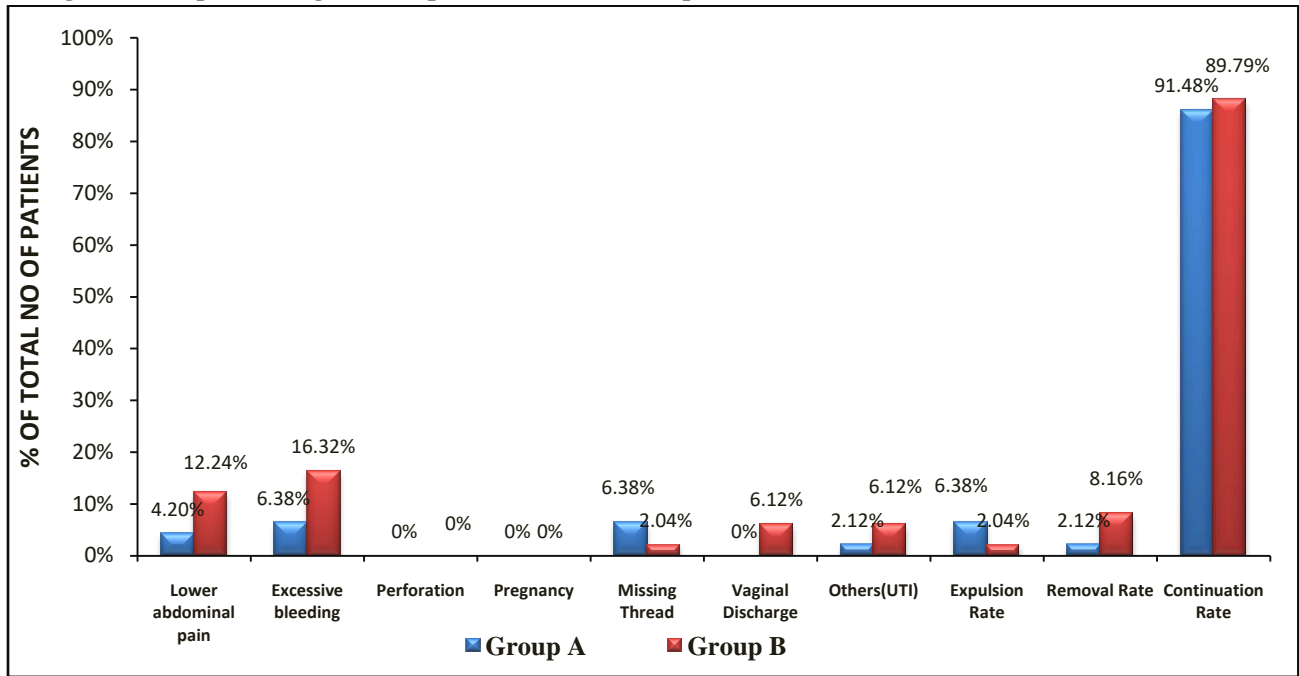
**Figure 1: Graph showing Comparison of immediate complications**



**Table 2: Late complications, removal, expulsion & continuation rates at the end of six weeks**

	Group A	Group B	P value
	N=47	N=49	
Lower abdominal pain	2(4.2%)	6(12.24%)	0.269
Excessive bleeding	3(6.38%)	8(16.32%)	0.12
Perforation	0(0%)	0(0%)	-
Pregnancy	0(0%)	0(0%)	-
Missing Thread	3(6.38%)	1(2.04%)	0.357
Vaginal Discharge	0(0%)	3(6.12%)	0.242
Others(UTI)	1(2.12%)	3(6.12%)	0.617
Expulsion Rate	3(6.38%)	1(2.04%)	0.357
Removal Rate	1(2.12%)	4(8.16%)	0.362
Continuation Rate	43(91.48%)	44(89.79%)	1

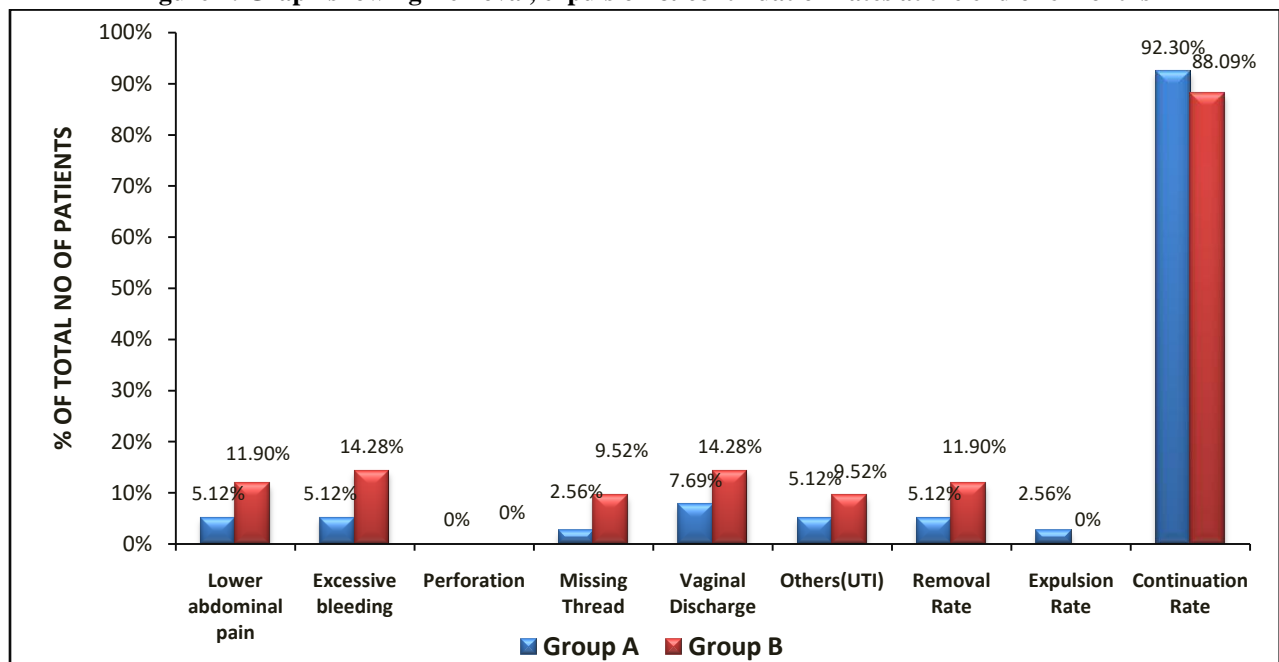
**Figure 2: Graph showing late complications, removal, expulsion & continuation rates at the end of six weeks**



**Table 3: Removal, expulsion & continuation rates at the end of 6 months**

	Group A	Group B	P value
	N=39	N=42	
Lower abdominal pain	2(5.12%)	5(11.90%)	0.434
Excessive bleeding	2(5.12%)	6(14.28%)	0.267
Perforation	0(0%)	0(0%)	-
Pregnancy	0(0%)	0(0%)	-
Missing Thread	1(2.56%)	4(9.52%)	0.361
Vaginal Discharge	3(7.69%)	6(14.28%)	0.485
Others(UTI)	2(5.12%)	4(9.52%)	0.677
Removal Rate	2(5.12%)	5(11.90%)	0.434
Expulsion Rate	1(2.56%)	0(0%)	0.481
Continuation Rate	36(92.30%)	37(88.09%)	0.714

**Figure 4: Graph showing Removal, expulsion & continuation rates at the end of 6 months**



#### 4. Discussion

In our study, we observed that, among immediate complications, higher rate of difficulty in insertion and cramps in the interval group as compared to post-placental group (14% vs. 4% and 24% vs 12% respectively).

Among immediate complications, Chen [9] reported difficulty in insertion in 1.96% and post-insertion cramps in 20% in the post-placental period. Chen [9] found none of the subjects in interval group had difficulty in insertion or cramps. Kittur S [10] found difficulty in insertion in 0.48% in post-placental group.

None of the cases of both groups had any evidence of uterine perforation during the process of insertion of IUCD. There were no perforation reported in Post Partum IUCD insertion in the studies carried out by Fair G *et al* [7] in 1992 and Villanueva *et al* [8].

At the end of 6 weeks we found higher rate of lower abdominal pain and heavy menstrual bleeding in group B as compared to group A (12.24% Vs 4.2% & 16.32% vs. 6.38%). At the end of 1 month, Celen [11] found minimal complications such as irregular bleeding; uterine cramps were negligible in post-placental group similar to our study. Eroglu [12] found that the incidence of excess bleeding was 1.2% in post-placental group and 2.2% in the interval group.

We have not found any case of pregnancy or perforation after 6 weeks in any group. Celen [11] observed no perforation which agreed with our study. Eroglu [12] reported pregnancies in 4.7% in the delayed insertion group and none in the post-placental group.

At the end of 6 weeks we found higher rate of missing thread in post placental group as compared to interval group (6.38% vs 2.04%) Intrauterine locations of IUDs were confirmed by ultrasound scan in case of missing strings in our study and those patients were counseled & reassured about the location of Cu-T. Eroglu [12] reported missing strings in 1.2% in post-placental group.

At the end of 6 weeks we observed more cases of infection in interval group as compared to post placental group (6.12% vs 2.12%). Chen [9] reported 2% of the patients in the post-placental group had infections at 6-8 weeks post-delivery.

At the end of 6 weeks expulsion rate were more in post placental group (6.38% vs 2.04%) but removal rate were more in interval group as compared to post placental group (8.16% vs 2.12%). The main reason for removal of Cu-T was excessive bleeding. Celen [11] reported that removal for bleeding and pain at six weeks was 0.3% and for other medical reasons was 0.1% in post-placental insertions. Eroglu [12] reported 11% complete expulsion in post-placental group and 3.6% in interval group comparable to our study (6.38% vs 2.04%).

Between one to six months, Eroglu [12] noted no cases of excessive bleeding in postpartum insertion group

and 1.6% in interval group whereas we had 5.12% cases in post partum group and 14.28% in interval group. Missing strings were seen in 3.3% in post-placental group which was higher than our study and 4.2% in interval insertion group which lower than our study result.

We had not found any case of perforation after 6 month followup which agreed with those of Morrison [13] and Eroglu [12]. In studies conducted by Celen [11], Chen [9] and Beltagy [15] no serious complications occurred such as perforation.

No pregnancy were noticed in our study in any group after 6 month follow up while Celen [11] observed intrauterine pregnancies in 0.75% patients with post-placental insertions at the end of one year.

Vaginal discharge and UTI were more in interval group as compared to post placental group (14.28% vs 7.69% and 9.52 % vs 5.12%). Morrison [13] found infections in <2% patients in his study on IUD insertion within 48 hours of delivery in Africa which was much lower than the results in our study.

At the end of 6 months the removal rate was more in interval group when compared with post placental group and expulsion rate was more in post placental group (11.19% vs 5.12% and 0% vs 2.56%)

According to Menon [14] the most common reason for removal was bleeding. Eroglu [12] had mentioned cumulative expulsion rate of 14.3% in post-placental group and 3.8% in interval group.

Similarly, Chen [9] reported 24% in post-placental vs 4.4% in the interval group. Continuation rate at the end of six months in post placental group was 92.30% Eroglu *et al* [12] found 83.2% ad Celen *et al*[11] found 87.6% continuation rate at the end of 6 moth.

#### 5. Conclusion

As per the studies carried out by us, it is very evident that, the insertion of an IUD immediately after placental delivery is ideal for women as it is easily available, convenient to women and health care providers and it is safe. Moreover it does not have any reports of perforations and pregnancy. It is also recommended because there is low rate of pelvic infections as compared to interval IUCD insertion. It allows women to obtain long acting, highly effective contraception. Thus we conclude that early post partum IUCD insertion is better than the interval IUCD insertion.

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