

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20191942>

Original Research Article

## Acceptance, safety and complications of postpartum intra uterine contraceptive device: a prospective study in tertiary care hospital

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**Received:** 07 February 2019

**Accepted:** 06 March 2019

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### ABSTRACT

**Background:** Intrauterine contraceptive device is a long acting, effective and reversible method of contraception. It can be inserted post placental during vaginal or LSCS delivery and within 48 hours of delivery. This study evaluates the acceptance, safety, side effects and complications associated with immediate post-partum intrauterine contraceptive device (PPIUCD) insertion.

**Methods:** The study was conducted at Hindu Rao Hospital and NDMC Medical College, Delhi for a period of 18 months. Patients admitted and delivered at Hindu Rao Hospital were counseled for PPIUCD, CuT 380 A / CuT 375 insertions and it was inserted within 10 minutes of delivery of placenta during vaginal delivery or LSCS or within 48 hours of delivery. Patients were followed at 6 weeks and then between 6 to 12 months of delivery for continuation, side effects or any complications.

**Results:** After counseling 1253 (9.8%) patients agreed for PPIUCD insertion out of which 650 patients came for follow up. 46% women came for routine follow up while 54.06% came with one or the other complications. Missed thread was most common complications, followed by bleeding P/V and pain abdomen. Expulsion in 5.5% and CuT failure was seen in 0.92% women only. Removal of IUCD was done in 94 patients for one or other reasons. There was retention of PPIUCD in 84.5% while removal was done in 14.5% during period of 6 months to one year follow up. Missed thread was main cause of anxiety among acceptors.

**Conclusions:** Immediate PPIUCD is safe and effective method of contraception with a high retention rate. Though acceptance in initial months was less but it gradually increased over time with increasing awareness, counseling of patients and training of health personnel.

**Keywords:** Intra uterine contraceptive device, PPIUCD, CuT 380 A, CuT 375

### INTRODUCTION

Intra uterine contraceptive device (IUCD) to prevent pregnancy is one of the oldest methods of contraception. The modern IUCD is highly effective, safe, private, long acting, coitus independent and rapidly reversible method of contraception with fewer side effects. It can be inserted safely, just after delivery within 10 minutes, during the first 48 hours after delivery when it is called post-partum intra uterine contraceptive device (PPIUCD), 6 weeks postpartum (extended postpartum), after an abortion (post

abortal), after menstrual cycle (interval IUCD) or as an emergency contraceptive.

Despite of many advantages associated with IUCD as a method of contraception, it generally suffers from disadvantage of unpopularity in India. About 1 out of 5 women in reproductive age group all over the world use IUCD while in India, it is used only by 3 in 100 women.<sup>1</sup> Although the Indian government offers IUCD services free of cost with incentive to patient and provider, it still remains underutilized. Immediate postpartum period is an

ideal time to educate and counsel women on exclusive breastfeeding, future fertility, birth spacing or limiting family size along with provision of appropriate family planning methods. Demographic and health survey show that 40 percent of women in the first year postpartum intend to use a Family Planning (FP) method but are not doing so. Only 26% of women are using some method of family planning during the first year of postpartum.<sup>2,3</sup>

The immediate postpartum period is particularly a favourable time for IUCD or implant insertion as women at this time are highly motivated to use contraception. They are known not to be pregnant at this time and the hospital setting also offers convenience and provision for both the patient and the health care provider to avail the facility. Also, the women are at risk of an unintended pregnancy in the period immediately after delivery.<sup>4</sup>

Introduction of PPIUCD in various countries has changed their scenario in population control. Immediate postpartum insertion of IUCD has been safely and effectively practiced in China since 1975 for population control. The postpartum insertion of IUCD is likely to be successful in our country also as reaching postpartum women for providing contraception has become easier by introduction of Janani Suraksha Yojna (JSY) and JSSK which have increased Institutional deliveries, thus providing an opportunity to women to have an easy access to immediate PPIUCD services. This study aims to evaluate the safety, efficacy, complications and continuation of PPIUCD in tertiary care center in North Delhi.

## METHODS

This study was conducted in Gynecology and Obstetrics department and family planning unit of Hindu Rao Hospital and North Delhi Medical College for a period of 18 months. All antenatal patients admitted in labor room for delivery in the hospital were counseled for postpartum IUCD 380A or 375 (Multiload). Women who were in the age group of 18-45 years with gestational age 36 - 41 weeks with Hb >9 gm% and no evidence of infection were considered for postpartum IUCD insertion. Patients with fever during labor or delivery or with ruptured membranes more than 24 hours before delivery, having active genital infection, needing manual removal of placenta or post-partum hemorrhage requiring additional oxytocics or women with known malformation of uterus were excluded from the study.

Women fulfilling the eligibility criteria and who had no contraindications for PPIUCD were inserted post placental IUCD within 10 minutes after vaginal delivery or LSCS or within 48 hours of normal vaginal delivery after informed consent. These patients were then advised for follow up in family planning unit as a routine follow up after 6 week and after 6 months to 1 year for any complications, side effects and discontinuation of PPIUCD. Patients were also advised to come back if

there was any foul-smelling vaginal discharge, excessive bleeding per vaginum, fever associated with abdominal pain and tenderness, feeling of being pregnant or suspicion that IUCD has fallen down (expulsion). Various data in relation to demographic factors such as age, parity, education was noted.

The acceptance rate, insertion rate, timing, mode of insertion, follow-up of clients, side effects, complications and reason for removal of the device were recorded. Data was entered in Microsoft Excel sheet, and analyzed using - SPSS Software and statistical inferences were drawn by applying test of significance.

## RESULTS

Out of 12,719 patients who delivered during this period, 1253 (9.8%) patients had agreed for PPIUCD insertion after counseling, but only 650 (49.8%) patients reported for follow up as shown in Table 1.

Distribution of patients according to time of insertion of PPIUCD has been shown in table 2 which shows that 45.8% patients got PPIUCD inserted post placental after normal vaginal delivery and 42.3% after LSCS.

**Table 1: Follow up of patients.**

Total PPIUCD Insertion	1253 (9.8%)	100%
Not came for follow up	603	48.1%
Reported for follow up	650	51.9%
Reported < 6 weeks	10	0.8%
Reported between 6 weeks to 6 months	235	18.7%
Reported between 6 months to 1 year	175	14%
Reported >1 year	230	18.3%

**Table 2: Distribution of patients according to time of insertion of PPIUCD.**

Time of insertion of PPIUCD	Number of patients	% of patients
Post placental after normal vaginal delivery	562	45.8%
Within 48 hours of delivery	159	11.9%
Post placental after LSCS	532	42.3%
Total	1253	100%

Table 3 shows the demographic profile of all the patients. Most of the patients were in the age group of 25 to 35 years and with two or three parity.

Out of 650 patients who came for follow up, 351 patients came with one or other complaints while 299 patients reported for routine follow up as shown in Table 4.

The continuation rate of PP IUCD in our study was 85.5% (556/650) while 94 (14.5%) patients got it removed due to various reasons as mentioned in Table 5.

**Table 3: Demographic profile of patients with PPIUCD insertion.**

Age in years	Number of women (650)	Percentage
20-24	120	18.46%
25-30	201	30.92%
30-34	208	32.00%
>35	121	18.61%
<b>Parity status</b>		
P1	94	14.46%
P2	202	31.07%
P3	233	35.84%
>P4	121	18.61%
<b>Status of education</b>		
Illiterate	152	23.39%
Up to high class	267	41.08%
Graduate	230	35.39%
Post graduate	1	0.01%

**Table 4: Distribution of patients according to complaints at follow up.**

Total patients for follow up	650	Percentage
Routine follow up	299	46.00%
Patients with complaints	351	54.06%
Missed thread	162	26.5%
Bleeding P/V	70	10.7%
Pain abdomen	53	8.6%
Spontaneous expulsion	33	5.5%
Cu T failure	6	0.92%

**Table 5: Distribution of patients according to reasons for removal.**

Reasons for removal	Number (94)	%
Bleeding Per vaginum	32	34.04%
Misplaced IUCD/partial expulsion	15	15.95%
Pain abdomen	24	25.53%
Cu T failure	6	6.53%
Infection	4	4.25%
Want to conceive	10	10.63%
Needing another method of contraception	3	3.19%

## DISCUSSION

This was a prospective study carried out in Gynecology department and Family planning unit of Hindu Rao Hospital, NDMC, Delhi, for a period of 18 months. 1253 (9.8%) accepted PPIUCD after counseling. The acceptance rate can improve by increasing awareness, proper counseling and giving incentives by Government of India. Acceptance in multi gravida was more in our study as only 14.8% patients were primi while 85.2% were multipara (Table 3). This is in accordance with the study conducted by Grimes et al, where they also had higher acceptance in multigravida (65.1%).<sup>5</sup> In this study,

the insertion of PPIUCD in normal vaginal delivery and LSCS were comparable (43.64%/42.36%). Vaginal delivery had added advantage that patient who did not give consent for post placental IUCD when further counseled for PPIUCD insertion during their immediate postpartum period, 11.93% patients consented for PPIUCD insertion within 48 hours of delivery. Thus, making counseling an important integral part of PPIUCD insertion for its acceptance in immediate post-partum period also.

Education level in our study among women was more than primary level education (76.61%) and (23.39%) women were illiterate which was similar to study done by Safwat et al, where patients with no formal education has lower acceptance rates (9.4%) and those with formal education had higher acceptance rate (19.4%).<sup>6</sup> Thus education has a positive effect on contraceptive acceptance.

51.87% of women came for follow up after PPIUCD insertion in our study which is similar to that reported by Mishra S et al, where 59.98% women visited for follow up.<sup>7</sup> 299 (46%) patients came for routine follow up with no significant problems while 351 (54%) patients came with one or other complaints (Table 4).

Most of the patients came between 6 months to 1 year while 10 patients reported even before 6 weeks with bleeding per vaginum and pain abdomen as a major problem. Missed thread was the most common complaint in our study with a cumulative incidence of 26.5% of missed thread at 6 months to 1 year follow up which is comparable to the study done by Sunita et al, who also found missed thread in 36.79% and 20.3% at 6 weeks and 6 months respectively.<sup>2</sup> Similar results were also seen in study done by Ahuja et al.<sup>8</sup> Missing thread is a common problem in post-partum IUCD as thread may take time to descend and in 75% of patients usually thread is visible by end of 3 months. With proper counseling and with USG showing IUCD within 1- 2 cm from fundus and if it was not associated with any other complaints, most of the patients were ready to retain it. Missed thread might be because of coiled thread, broken thread, expulsion or rarely perforation.

At times patients came with complaints of long thread seen at vulva at 6 weeks which was cut in subsequent visits. Most of the patients continued with PPIUCD in our study after counseling and reassurance and removal was done in only 15 patients. Other common problem faced by women in our study was increased bleeding per vaginum (P/V) followed by pain abdomen. Significant bleeding P/V was seen in 70 (10.7%) women while in a study done by Ahuja et al, bleeding per vaginum was the main complaint by the patients (23.5%).<sup>8</sup> Excessive bleeding settled with hemostatics within 1 - 3 months and option of removal was given to them when it did not settle with usual treatment.

Pain abdomen was seen in 8.6% of patients in our study. Clinical PID was treated with antibiotics and Infection requiring removals were seen in only (4.25%) patients. Spontaneous expulsion was seen in only 33 patients (5.5%) in our study, which is comparable to the studies conducted by Singhal S et al, and Katheitt G et al, where expulsion rate was 5.3% and 8.9% respectively.<sup>2,9</sup> Postpartum insertion of IUCD is associated with high expulsion rate, usually seen in first few months of insertion as the uterus contracts and the cervix is dilated.

Removal of IUCD (Table 5) was done in 94 patients (14.5%) only and increased bleeding P/V was the commonest cause (32/94 or 34.04%) followed by pain abdomen (25.53%), misplaced IUCD or partial expulsion (15.94%) and infection (4.25%). Our study had maximum removal as a result of excessive bleeding P/V (34.04%) which is similar to study conducted by Mishra S, who also had maximum removal because of increased bleeding (33.88%).<sup>7</sup> CuT failure was seen in 6.38% patients where IUCD was removed and MTP or continuation of pregnancy was done depending upon patient's wishes. Thus, complications needing removal was seen in 86.17% patients while in 13.82% IUCD were removed without any complications as some patients opted for sterilization or wanted to conceive. IUCD was removed in those patients during follow up visits as they had proper spacing of one and half years to 2 years. So PPIUCD is a good contraceptive method in postpartum period for spacing of child birth when limited options are available due to lactation. There was high continuation rate of PPIUCD in our study as 85.5 % of patients continued to retain their IUCD after 6 months to one year follow up with no reported incidence of perforation and with low rates of expulsion and pelvic infection. It is similar to the study conducted by Yousef et al in Jordan and also Sharma M et al where they had discontinuation of PPIUCD in the range of 16.79% in the first year of their study.<sup>10,11</sup> While discontinuation rate was higher 28% in a study conducted in Egypt by Mahdy et al.<sup>12</sup> Our study has lower discontinuation rate as we included patients mainly up to one year follow up and did not include further follow up of these patients. Lost string, though a cause of anxiety among patients can be easily tackled by proper counseling and reassurance.

## CONCLUSION

Proper counseling of patients in antenatal period and further reinforcing counseling during early labour and even further during early post-partum period can increase the acceptability PPIUCD (Post placental and within 48 hours of delivery). Acceptance can be further increased by creating awareness among people through various media resources and by training health personnel to obtain necessary skills so as to decrease expulsion rate and complications. In our country, where women have limited access to family planning method, requiring only one-time motivation, PPIUCD can be a boon for women for proper spacing and limiting child birth. Thus

postpartum IUCD after normal vaginal delivery and after lower segment caesarean section seems a good option for women for prevention of unplanned and unwanted pregnancies as it is safe, convenient, long acting, requiring one time motivation, does not interfere with lactation, provides adequate birth spacing, immediately reversible and does not need repeated health care visits for contraceptive refills. Excessive bleeding being the most common cause for removal but hemostatics, hematinics and timely treatment of infection can reduce it further.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Jain R, Sharma M, Gupta S. Acceptance, safety and complications of postpartum intra uterine contraceptive device: a prospective study in tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol* 2019;8:1916-20.