

OVERVIEW OF IMMEDIATE PPIUCD APPLICATION IN BUNDELKHAND REGIONRajni Gautam¹, K. N. Arya², S. Kharakwal³, Sudhir Singh⁴, Monika Trivedi⁵**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: AIMS AND OBJECTIVE: To assess the safety, acceptability, efficacy, feasibility and complication of immediate PPIUCD insertion. **METHODS:** Cu T 380A was used for PPIUCD insertion immediately following delivery of placenta during caesarean section or within 48 hours following childbirth. **RESULT:** The study was conducted in obstetrics and gynecology department in MLB Medical College Jhansi. The total number of deliveries during the study period was 4695, among these 1941 women were eligible for PPIUCD insertion. 423 women accepted PPIUCD insertion (21.77%), while 1518 women (78.23%) declined insertion. In those 100 (8.92%) of normal delivery women had a post placental insertion and 27 (2.4%) women had post-partum insertion. 296 women had trans-caesarean insertion. The PPIUCD inserted women were followed-up at six weeks. 274 women's were followed. **CONCLUSION:** The acceptance of PPIUCD was high in the parturient, who had aged less than 19 years, was primiparous, had last childbirth between 0-2 years. The total 1518 parturient declined the use of PPIUCD. The reason for acceptance of PPIUCD were due to its long term effects; safety and reversibility. Few complications in the form of irregular bleeding, increase duration of bleeding, missed the thread, infection, removal and expulsion were noted.

KEYWORDS: Immediate PPIUCD Cu T 380A complication, safety.

INTRODUCTION: India is the second most populated country in the world after China with more than a billion people and approximate 250 women having a maternal mortality rate 254/100.000 live birth. India has one of the highest numbers of maternal death in the world. Indian women have more children than desired and often too closely together due to limited choice of quality, family planning services and the urgent need of family planning. Short intervals between births are linked to higher maternal and child mortality and morbidity.¹

In India current method of family planning is (1) Family sterilization 34% (2) Male sterilization.1% (3) pills 4% IUD 2% and condom 6% (4) any traditional method 7% (5) non user 46%. The modern IUCD is highly effective, safe, long acting, coitus independent and rapidly reversible method of contraception with few side effects. It is most cost effective method of contraception today. Many women also find the IUCD to be very convenient because it requires little action once it is in place.¹

Family planning can avert nearly one-third of maternal deaths and 10% of child mortality when couples space their pregnancies more than two years apart.² Postpartum family planning (PPFP) is the prevention of unintended and closely spaced pregnancies through the first twelve months following childbirth.² Postpartum women need a range of effective contraceptive methods to be able to prevent an unplanned pregnancy, within a short interval.^{1,2}

The postpartum period is potentially an ideal time to begin contraceptions women are more strongly motivated to do so at this time, which also has the advantage of being convenient for both

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patients and healthcare providers.³ Among the options available, the multi-year cost of the Copper T 380A IUD makes it one of the most cost-effective contraceptive options available. The Copper T 380A intrauterine contraceptive device (IUCD) is a highly effective, non-hormonal method that can be safely used by all women regardless of breastfeeding status during this interval.

According to the World Health Organization Medical Eligibility Criteria, an IUCD can be inserted in the 48 hours postpartum, referred to here as a postpartum IUCD (PPIUCD), or after four weeks following a birth.⁴ A 2010 Cochrane review concluded that PPIUCDs were a safe and effective contraceptive method. The public health benefits from PPIUCDs stemmed from the women's increased accessibility to PPIUCDs following facility births, as PPIUCDs could be offered at health facilities after childbirth.

This, in turn, decreased opportunity and other costs incurred by clients who may otherwise have to return to facilities to access contraceptive services.⁵ In India, the 2005–2006 National Family Health Survey (NFHS) reported that 61% of births were spaced less than three years⁶ and that 22% of married women had an unmet need for family planning. A subsequent stratified analysis suggested that 65% of women in the first year postpartum had an unmet need for family planning.⁷ IUCDs are used by only two percent of current users of contraception in India.⁶

This approach of immediate postpartum IUCD insertion is more applicable to our country where delivery may be the only time when a healthy woman comes in contact with healthcare personnel. Other advantages of insertion of an IUCD after delivery are that the discomfort related to interval insertion can be avoided and any bleeding from insertion will be disguised by lochia.⁸

This study was conducted to evaluate the safety and efficacy of Immediate Postpartum Intra Uterine Contraceptive Device (PPIUCD) insertion in women delivering vaginally or by caesarean section. With this background, the present study was undertaken to assess the safety (incidence of perforation/pain/bleeding/foul discharge) and expulsion rates of Cu T 380A, a long term reversible method that can serve as an alternative for sterilization for many women.

Expulsion rates at 6 week follow up and willingness to continue when Cu T 380 A inserted within ten minutes of placental expulsion in vaginal deliveries. The acceptability of this method and the ease of insertion by trained personnel and the dropout rate for follow up were also assessed.

MATERIAL AND METHOD: 4695 pregnant women who attended the Obstetrics Service, in M L B Medical college Jhansi from January 2012 to October 2013, out of which 1941 women's were eligible for PPIUCD insertion. Counseling on postpartum contraception was given either during antenatal care visitor during the postpartum stay in the hospital (and avoided during the intranatal period, when the women were in labor and therefore unable to make any informed decision).

Participating staff and health workers received at least one course in counseling as well as prescribing and administering various contraceptives under the supervision of international visiting consultants from the Association of Voluntary Safe Contraception.

STUDY DESIGN: This was an open label, prospective, and longitudinal study to assess the safety and efficacy of the Cu T 380 A when inserted within 10 minutes of placental expulsion in vaginal deliveries and during caesarean section.

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PATIENTS: Study participants were recruited through hospital antenatal clinics. Postpartum contraception was routinely discussed at prenatal visits. Those willing for immediate postpartum insertion of Cu T 380 A within 10 minutes of placental expulsion were included in the study group and informed consent was obtained. Those opting for insertion at 6 weeks/ or permanent method of sterilization or other temporary methods were offered the same. The study was approved by the ethics committee of the Federation of Obstetric and Gynaecological Societies of India (FOGSI).

INCLUSION CRITERIA: All antenatal patients admitted at the centre at around 36 to 40 weeks of gestation at our institution in India whose consent was obtained prior to admission were included. During enrolment the following criteria were considered for inclusion:

- 18 - 40 years old.
- 27 - 40 weeks EGA.
- Desire to have CuT after counselling.
- Anticipate vaginal delivery/C section.
- No prior caesarean delivery.
- No infections/ Hb \geq 8 g/dl.
- No Diabetes Mellitus, Hypertension.
- Oxytocin routinely/universally given after the delivery of the infant.

EXCLUSION CRITERIA: The patents with $<$ 8 gm% Hb, with pelvic infection, foetal loss and following post-delivery complications were excluded:

- LSCS delivery.
- Temperature $>$ 38°C during or after labor.
- ROM for $>$ 24 hours prior to delivery.
- PPH.

METHOD OF INSERTION^o:

- Bimanual exam was performed to evaluate the cervix and the uterus after the delivery of the placenta and ensured empty cavity with contracted uterus.
- IUCD removed from insertion device and positioned at the edge of a sterile kelly forceps/sponge holder.
- The copper T model Cu T 380 A (Figure 1) was inserted with all aseptic precautions within 10 minutes of placental expulsion with a Kelly forceps and fundal placement was ensured. The string cut to the level of the cervix. The string was always visible on the cervix after the insertion. The IUCD was inserted under ultrasound guidance in the training period of three days to get the concept of placement at fundus and reinforced with palpation with hand at fundus. We were quite reassured that the USG ensured the placement which we could check with ease, but later it gave us a confidence to place it even without the use of the USG machine subsequently.

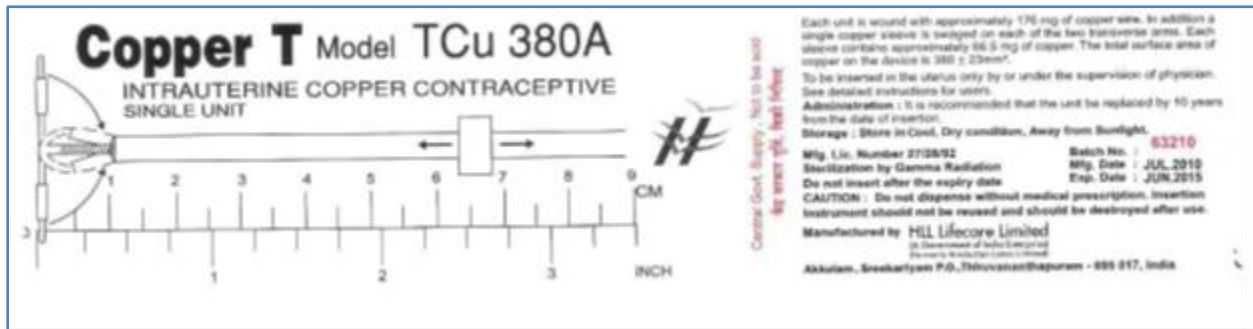


Fig.1: Copper T model CuT380

SAFETY ANALYSIS:

- Safety was assessed on the basis of patients' complaints with respect to excess of bleeding or foul discharge and if any pain.
- Complications such as expulsion of IUCD, pelvic infection, displacement and perforation (if any) were noted.

FOLLOW UP: Follow up schedule was at 6 weeks after insertion. The following checklist was by checking their oral temperature and abdominal examination for suprapubic tenderness and involution of the uterus.

Efficacy Analysis: Expulsion rates at 6 weeks follow-up were measured.

Statistical Analysis: Data entry was done using statistical package for the social science's version 17.0 for statistical analysis. Descriptive data were summarized as percentage or means. Paired Chi-square test was used to measure the strength of association between variables, A p-value of <0.05 was considered to be statistically significant.

RESULT: A total of 4695 deliveries during the study period were done. Among these deliveries 1941 women were eligible for PPIUCD insertion. A total of 423 women (21.77%) women accepted PPIUCD insertion, while 1518 women (78.23%), almost three quarter of them declined insertion. Out of total 1941 women, who were eligible after normal delivery was 1121.

Of these, 100 (8.92% of normal delivery) women had a post placental insertion and 27 (2.4% of normal delivery) woman had post- partum insertion. Among those, who had caesarean section number of eligible women was 820. Out of these 296 (36.09% of caesarean section) had trans-caesarean insertion.

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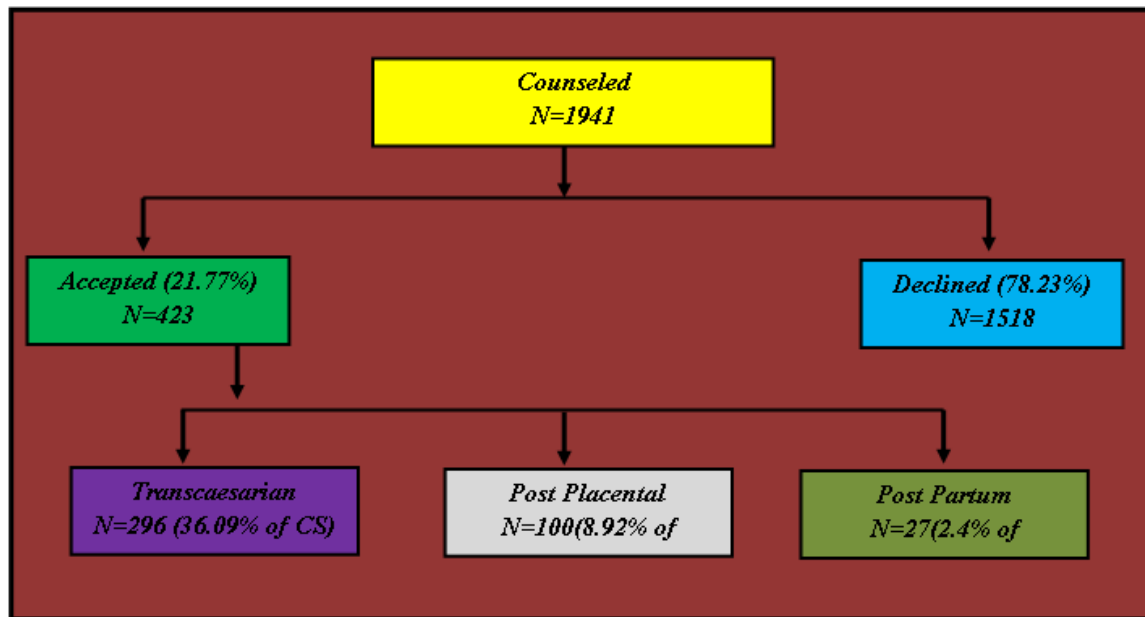


Fig. 2: Recruitment of study participants

Table 1 shows majority of women in the study was primiparous (44.9%) mean parity was 2 and grand multipara form small percentage (2.6%). The highest percentage of acceptance was found in primiparous (28.09%) but there was no significant association ($p=0.593$).

Parity	Total N=1941	Accepted N=423	Declined N=1518	P- value
1.	872 (44.9%)	245 (28.09%)	627 (71.91%)	0.593
2.	586 (30.1%)	128 (22.45%)	458 (78.55%)	
3.	321 (16.5%)	32 (10%)	289 (90%)	
4.	110 (5.6%)	14 (12.7%)	96 (87.3%)	
5.	52 (2.6%)	4 (7.7%)	48 (92.3%)	

Table 1: Acceptance of PPIUCD in relation to parity

Mode of Delivery	Total N=1941	Accepted N=423	Declined N=1518	P- value
Normal vaginal delivery	1121 (57.76%)	127 (11.33%)	994 (88.67%)	0.004
C.S.	820 (42.24)	296 (36.09)	524 (63.91)	

Table 2: Acceptance of PPIUCD in relation to mode of delivery

This table shows acceptance rate for PPIUCD is good in caesarean section as compared to vaginal delivery. Caesarean section shows significant association ($p=0.004$) in relation to normal vaginal delivery.

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Reason	Number	Percent
Prefer to use another method	455	30%
Satisfied with previous contraceptive method	227	15%
Need to discuss with my partner	197	13%
Fear of pain and heavy bleeding	151	10%
Partner refusal	136	9%
Don't want contraception immediately	106	7%
No reason	48	3.1%

Table 3: Reason for declining PPIUCD among parturients (N=1518)

Table 3 shows total of 1518 parturient (8.23%) declined the use of PPIUCD, among these majority was preferred to another form of contraception (30%). The percentage was more than 100% as there were multiple responses.

Reason	Number	Percent
Long Term	232	54.8%
Reversible	148	34.9%
Safe	97	23%
Fewer	67	15.8%
Non hormonal	46	10.8%
No remembrance once inserted	38	9%
No interference with breastfeeding	21	5%

Table 4: Reasons for accepting of PPIUCD among Parturient whom IUCD was inserted, (N=423)

Table 4 shows that more than half (54.8%) of those women's who accepted PPIUCD were due to the reason of its long term effect. About one third (34.9%) were accepted due to reversibility. Total percentage more than 100% shows there were multiple responses.

Complications	Number	Percent
Irregular bleeding/ increased duration of bleeding	52	19%
Missed thread/displacement	35	12.7%
Infection	12	4.3%
Removal	11	4%
Expulsion	8	3.1%
Uterine perforation	0	0%
Satisfied	170	62%

Table 5: Complication at 6 weeks after PPIUCD insertion (N=274)

Table 5 shows that among 423 parturient of PPIUCD insertion, 274(64.77%) were followed and 149 (35.23%) were lost to follow up. Out of 274 parturient who were followed up after PPIUCD

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insertion, 52(19%) developed bleeding problems in the form of increase duration of bleeding or irregular bleeding. There were missed thread in 35 (12.7%). There was no parturient who had uterine perforation. 170(62%) were satisfied and had no complaints.

DISCUSSION: Postpartum IUCD insertion is an opportunity not to be missed in developing countries like ours where delivery may be the only time when a healthy woman comes into contact with health care providers and the chances of returning for contraceptive advice are uncertain. It does not interfere with breastfeeding, is convenient for both women and their health care providers, is associated with less discomfort and fewer side effects than interval insertions and allows women to obtain safe, long acting, highly effective contraception while already within the medical system.¹⁰

In this study, the proportion of parturient accepting PPIUCD and their obstetric characteristics was determined. The duration since the parturient last child was significantly associated with acceptance of PPIUCD. Women, who had their last childbirth less than two years ago, had significant (27%) acceptance rate. This could be explained that women who had a short pregnancy felt they required a long acting and reliable method of contraception.

This also has the added advantage of giving the mother enough time to recover from the physical stress of one pregnancy before moving on to the next and gives enough time for lactation. A report released by WHO in 2006, healthy timing and spacing of pregnancies has a positive effect on maternal health and newborn outcome. When compared with other parity groups, acceptance of the PPIUCD was higher among primiparous (28.09%). Similar finding was reflected in the study done by safwat et al in Egypt, where 30% of primiparous accepted the use of PPIUCD compared to 15% of grand multiparous.¹¹ In all studied women 75 had expulsion of IUCD and expulsion rate at the end of 6 months was 6%.

This compares favorably with four multisite studies in the UN-POPIN report found that after six months, the cumulative expulsion rate was 9% for immediate post placental insertion compared with 37% expulsions with insertions between 24 to 48 h after delivery¹². Among those women who declined the PPIUCD, a third of them (30%) preferred to use another contraceptive method, 13% of them needed to discuss with their partner and 15% were satisfied with previous contraceptive method used. In a study done in Egypt, among the 71.1% women who refuse the IUCD, planning another pregnancy in the near future(34.3%) was the most common reason followed by the preference of interval IUCD (30.2%) and lactational amenorrhea (9.3%).

A significant number of women declined the PPIUCD because of non-partner involvement. This reveals the importance of partner involvement during counseling and decision making. In our setup women who visit the antenatal clinic are usually not accompanied by their partner and therefore couple counseling is lost during this period. In Asia postpartum study, husband's desire for IUCD removals was a significant reason for removal, emphasizing the importance of involving the husband in prenatal counseling.¹³

Most of the women with parity more than two (95%) believed that as there will not be menstruation during lactation, so there was no immediate need for contraception during lactation period. Predominant son preference and the belief that PPIUCD insertion might hinder their chance for future conception was the second most common reason for refusal in multipara (65%).¹⁴

Overall acceptance of PPIUCD was generally good (21.77%) despite a very low usage of the interval IUCD in India (2%). A plausible explanation of the relatively high acceptance of PPIUCD was

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the newness of the immediate postpartum IUCD in the community. Across the region, in spite of its low cost and effectiveness¹⁵. It should be noted that there were no serious complication in this study.

Expulsion rates of the immediate PPIUCD at 6 weeks interval was 3.1%. This was similar to a multi country study done in Belgium, Chile and Philippines which showed the rate of expulsion at 1 month, ranging from 4.6-16.0%. ¹⁶In this study, pelvic infection (4.3%) was slightly higher compared to a study done in Kenya and Mali which indicated a rate of less than 2%. A study done in Ethiopia revealed that lower genital tract infections are very common among apparently healthy looking pregnant women with an overall prevalence of 40-54%.¹⁷ 35 women (12.7%) among those inserted with PPIUCD had lost strings at six weeks. An ultrasound confirmed that the IUCD was in situ. Absence of uterine perforation with extremely low rate of expulsion (3.1%), Pelvic infection(4.3%) and lost strings (12.7%) are strong indicators of safety. The position of cu T was in situ in 94.78% of subjects, ultrasound was used in 24.76% to confirm location where threads were not visible in the vagina and in 6.19% of subjects the tip of IUCD was in the cervix which was pushed back into the uterus using artery forceps. It was expelled in 5.23% of patients. There was no case of perforation in this series and no other major complication. One recent study from Turkey of PPIUCD among women after C-section reported an expulsion rate of nearly 18%.¹⁸

CONCLUSION: Awareness of the PPIUCD among these women was very poor despite high acceptance. The majority of the women had heard about the PPIUCD from the antenatal clinic. Parturient who had a short duration of their last child birth (2 years) had greater acceptance of PPIUCD. Acceptance was high in primiparous women preferred not to use any method of contraception and want ligation as a permanent method when family completed. So the PPIUCD was demonstrably safe, having no reported incidence of perforation with low rate of expulsion, pelvic infection and lost strings.

REFERENCES:

1. Rutstein S: Further Evidence of the Effects of Preceding Birth Intervals on Neonatal, Infant, and Under-Five-Years Mortality and Nutritional Status in Developing Countries: Evidence from the Demographic and Health Surveys. DHS Working Papers No. 41. Macro International; 2008.]
2. Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J: Family planning: the unfinished agenda, *Lancet* 2006, 368:1810-827. Pub Med Abstract | Publisher Full Text
3. Xu JX, Reusche C, Burdan A: Immediate postplacental insertion of intrauterine device: A review of Chinese and world experiences. *Adv Contracept* 1994; 10: 71-82.
4. World Health Organization: Medical Eligibility Criteria for Contraceptive Use. 4th edition. Geneva: World Health Organization; 2010.
5. Grimes D, Lopez LM, Schulz KF, Stanwood NL: Immediate post-partum insertion of intrauterine devices. *Cochrane Database Syst Rev* 2010, 12CD003036.
6. International Institute for Population Sciences (IIPS) and Macro International: National Family Health Survey (NFHS-3), 2005-06, India, Key Findings. Mumbai, IIPS, 2007. Accessed at <http://www.measuredhs.com/pubs/pdf/SR128/SR128.pdf> website, on March 14, 2013.
7. Borda M: Family Planning Needs during the Extended Postpartum Period in India. Access Family Planning Initiative Brief, 2009. Accessed at http://www.accesstohealth.org/toolres/pdfs/India_Analysis.pdf website, on March 14, 2013.

ORIGINAL ARTICLE

8. Shukla M, Qureshi S, Chandrawati. Post placental intrauterine device insertion -- A five year experience at a tertiary care centre in north India. *Indian J Med Res* 2012; 136: 432-5.
9. O'Hanley K, Huber DH. Postpartum IUCDs: keys for success. *Contraception* 1992;45:351-61]
10. Kapp N, Curtis KM. Intrauterine device insertion during the postpartum period: a systematic review. *Contraception* 2009; 80: 327-36.
11. Rosenberg MJ, Waugh MS, Long S. Unintended pregnancies and use, misuse and discontinuation of oral contraceptives. *Journal of Reproductive Medicine*.1995; 40: 355-360.
12. United Nations Population information network (POPIN), UN Population Division, Department of Economic and Social Affairs with support from UN Population Fund. Network Intrauterine devices. *Family Health International*. Winter 1996; 16:4.
13. May K, Ngo, T D, Hovig D. Expanding contraceptive choices for women: Promising results for the IUD in sub-Saharan Africa. London: Marie Stopes International, 2011.
14. Kittur S, Kabadi YM: Enhancing contraceptive usage by post-placental intrauterine contraceptive devices (PPIUCD) insertion with evaluation of safety, efficacy, and expulsion. *Int J Reprod Contracept Obstet Gynecol* 2012, 1:26-32.
15. Postpartum IUCD reference manual. New Delhi: Family Planning Division, Ministry of Health and Family Welfare, Government of India; 2010.
16. Blanchard H, Mac Kaig C. ACCESS-FP Program. 2006. Postpartum contraception: Family planning method birth spacing after childbirth. Power point presentation.
17. Peri N, Graham D, Levin D. Imaging of intrauterine contraceptive devices. *Journal of Ultrasound Med*.2007; 26 (10):1389-401.
18. Celen S, Sucak A, Yildiz Y, Danisman N: Immediate post-placental insertion of an intrauterine contraceptive device during caesarean section. *Contraception* 2011, 84: 240-243.

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