e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2025; 17(10); 05-09

Original Research Article

Comparative Study of Copper T 380A and Multiload 375 as Post Placental Intrauterine Contraceptive Device

Suruchi Smriti[1], Kumar Amritanshu[2], Pratibha Sinha[3], Faizan Anwar[4]

[1]HOD cum Faculty DNB Course, Department of Obstetrics and Gynaecology, Sadar Hospital, Motihari, East Champaran, Bihar.

[2]Director, Faculty DNB Course, Department of Pediatrics, Sadar Hospital, Motihari, East Champaran, Bihar

[3]Post Graduate Student, Department of Obstetrics and Gynaecology, Sadar Hospital, Motihari, East Champaran, Bihar

[4]Post Graduate Student, Department of Pediatrics, Sadar Hospital, Motihari, East Champaran, Bihar

Received: 01-07-2025 / Revised: 15-08-2025 / Accepted: 21-09-2025

Corresponding author: Dr. Suruchi Smriti

Conflict of interest: Nil

Abstract

Background: Intra-uterine contraceptive devices (IUCDs) are extremely effective, useful, coitus independent and well tolerated method of contraception. Increased hospital deliveries provide women easy access to postpartum intrauterine contraceptive devices (PPIUCD) services. CuT 380A and Cu 375 both are available free of cost in government hospitals. Aim of this study to effectiveness, safety, efficacy, side effects and complications of CuT 380A IUCD and Cu 375 IUCD in post placental insertion.

Methods: A prospective and comparative study between two copper bearing Intrauterine Contraceptive Devices: Copper T 380A and Multiload 375 was conducted Sadar Hospital, Motihari, Bihar. A total of 200 pregnant women undergoing normal vaginal delivery were enrolled. The subjects were divided in two groups, each comprising of 100 subjects. In Group A, CuT 380A and in Group B, ML 375 was inserted. Follow-up was done after six weeks, three months and six months.

Results: The results showed maximum usage in age group of 19 to 24 years in both the groups. At the end of six months the continuation rate was 76.59% in Group A and 80.64% in Group B. There was no case of perforation or failure in both the groups. Rate of expulsion was 8.51% in Group A and 9.68% in Group B.

Conclusion: There was no significant difference between CuT 380A and ML 375 with regards to the effectiveness, safety, efficacy, side effects and complications in post placental insertion.

Keywords: IUCD; Postplacental; Contracepon; PPIUCD forceps.

Introduction

India is the most populous country in the world and the population in our country is also one of the youngest in the world.[1]. Even though fertility rates have declined, the large number of young reproductive population will continue to increase the overall population resulting in a continuous higher need for family planning services. In our country family size limitation relies too heavily on permanent method of contraception in the form of female sterilization and there is a large unmet need for temporary methods. Another major problem in India is short interpregnancy interval which contributes to higher maternal morbidity and mortality. We expect that the long-acting reversible contraception usage will increase the birth intervals and thereby reduce the incidence of anemia, abortions, premature labor, PPH, low birth weight babies, fetal loss and maternal death.[2] The current contraceptive prevalence rate in the married women aged 15 to 49 is only about 54%.[3] In Indian community early conception after marriage is very common. Most couples avoid using contraception soon after the marriage. It's also observed that after childbirth couples do not think about contraception immediately believing that the breast feeding will protect the subsequent childbirth for some time. The time passes quicker than the realization and then they either don't have the felt need for contraception or it remains as an unmet need. It has been found that only 26% of women use contraception during the first year postpartum.[4] These factors result in a load of unintended pregnancies. There is thus a compelling need for long-acting reversible contraception for both spacing and family size limitation. The family planning program in India is now promoting the

use of postpartum contraception especially postpartum intrauterine devices as long-acting reversible method. The use of copper IUCD in the immediate postpartum period, including after cesarean delivery, has category 1 rating in the WHO medical eligibility for contraceptive use. Choice of basket to the women is known to increase the acceptability. Therefore, this study was done to compare copper T 380A and multiload 375, the two most commonly used IUCD in our family planning units, as postpartum contraceptive methods. Their efficacy, safe complications were compared.

Material and Methods

A prospective and comparative study was carried out between two copper bearing Intrauterine Contraceptive Devices: Copper T 380A and Multiload 375 in the Sadar Hospital, Motihari. A total of 200 pregnant women who underwent vaginal delivery were enrolled for the study after proper counseling and written consent during the study period January 2024 to December 2024.All antenatal women admitted in hospital and delivered vaginally, willing for PPIUCD and follow-up were included in this study.

Prolonged PROM >18 hours, chorioamnionitis, unresolved PPH and unwilling for PPIUCD and follow-up were excluded in this study.

Following delivery of the baby, active management of third stage of labour was done in all subjects and postplacental insertion of IUCD was done after ruling out contraindications.

Subjects were divided randomly into two groups. Computer generated randomization method was used for randomization.

Group A (n=100): CuT 380A was inserted.

Group B (n=100): ML 375 was inserted.

All the insertions were done with PPIUCD forceps within 10 minutes of delivery of placenta under strict aseptic conditions. The subjects were reassured regarding proper placement of PPIUCD while recovering in postpartum ward and any of their concerns were addressed.

All patients who received PPIUCD were advised to come for first follow-up at six weeks, second follow-up at three months and third follow-up at six months of insertion or earlier if they had any complaint.

CuT 380A **ML 375** **PPIUCD forceps**

Figure 1:

Results

In the present study, the mean age at time of PPIUCD insertion came out to be 24.98 ± 3.88 years in Group A and 25.41 ± 4.02 years in Group B. Statistically it was not significant (p-value 0.443). The primipara and multipara subjects were equally distributed in both the study groups. In Group A, 44% of the subjects were primipara and 56% were multipara and in Group B, 48% were primipara and 52% were multipara. Counseling was done regarding PPIUCD during antenatal period in 45% of subjects and 55% in early labour in Group A.

In Group B, counseling was done during antenatal period in 47% and 53% were counseled in early labour. In present study, only 33% patients in Group A and 27% patients in Group B gave history of prior contraceptive use and prior IUCD use was

only 1% in Group A and none in Group B. The follow-up of subjects was done either telephonically or by clinic visit. Though first follow-up was advised at 6 weeks but 14% in Group A and 6% in Group B reported for follow-up at < 6 weeks for various reasons. Table 1 shows the reasons to report for first follow-up at < 6 weeks.

The most common complaint with which subjects came before 6 weeks was pain abdomen 4 (4.21%) in Group A and 2 (2.15%) in Group B, followed by excessive bleeding per vaginum i.e. 2 (2.11%) in Group A and 1 (1.08%) in Group B. Both the groups had one subject each coming due to expulsion.

Table 1: Reasons for reporting at <6 weeks

Complaints	Group A Cu T 380A n=95	Group B ML 375 n=93	Chi-square	p-value
Bleeding per vaginum	2(2.11%)	1(1.08%)	0.75	0.387(NS)
Pain abdomen	4(4.21%)	2(2.15%)	0.38	0.540(NS)
Pain and Bleeding	1(1.05%)	-	0.00	1.000(NS)
Expulsion	1(1.05%)	1(1.08%)	1.00	0.317(NS)
No complaints/follow-up of babies	6(6.32%)	2(2.15%)	0.33	0.564(NS)
Total	14(14.74%)	6(6.45%)		

NS=Not Significant

Majority of the subjects had no complaint and they were satisfied with their method of contraception i.e. 78 (82.10%) in Group A and 70 (75.27%) in Group B at the end of 6 weeks. In both the groups, the main complaint was pain abdomen, 8 (8.42%) in Group A and 18 (19.35%) in Group B, this was statistically significant. In Group A, 5 (5.26%) and in Group B, 2 (2.15%) had complaint of pain with excessive bleeding.

A total of 7 (7.37%) in Group A and 9 (9.68%) in Group B had expelled Cu T. Also, 9 (9.47%) in Group A and 5 (5.38%) in Group B requested for removal due to various reasons (Table 2).

Table 2: First follow-up of subjects at end of 6 weeks

First follow-up at 6 weeks	Group A Cu T 380An=95	Group B ML 375n=93	Chi-square	p-value
No complain	78(82.10%)	70(75.27%)	0.80	0.372(NS)
Bleeding P/V	4(4.21%)	2(2.15%)	0.38	0.540(NS)
Pain abdomen	8(8.42%)	18(19.35%)	3.70	0.043(S)
Pain and Bleeding	5(5.26%)	2(2.15%)	0.57	0.450(NS)
Expulsion	7(7.37%)	9(9.68)	0.24	0.628(NS)
Request for removal	9(9.47%)	5(5.38%)	0.64	0.423(NS)
Threads irritation	Nil	1(1.07%)	0.00	1.000(NS)

NS=Not Significant

Table 3 shows second follow-up of subjects. In both groups, majority of the subjects had no complaint i.e. 75.53% in Group A and 80.65% in Group B.

One subject each in both groups complained of excessive bleeding P/V. Moreover, 4 (4.25%) in Group A and 2 (2.15%) in Group B complained of pain abdomen. In each group, one subject complained of pain and bleeding. In Group A, one case of expulsion was there whereas there was no case of expulsion in Group B.

Three subjects each in both groups got IUCD removed because of pain and bleeding inspite of repeat counseling.

Table 3: Second follow-up of subjects at 12 Weeks

Second follow-up of subjects at (12 weeks)	Group A CuT380A N=78	Group B ML 375 N=79	Chi-square	p-value
No complain	71(75.53%)	75(80.65%)	0.23	0.630(NS)
Bleeding P/V	1(1.05%)	1(1.08%)	0.50	0.480(NS)
Pain abdomen	4(4.25%)	2(2.15%)	0.38	0.540(NS)
Pain and Bleeding	1(1.06%)	1(1.08%)	0.50	0.480(NS)
Expulsion	1(1.06%)	Nil	0.00	1.00(NS)

NS=Not Significant

In both the groups, majority of the subjects had no complaints at the me of third follow-up (Table 4).

One (1.06%) subject complained of bleeding and one (1.06%) complained both for pain and bleeding P/V in Group A. In Group B, one subject (1.08%) complained of pain abdomen. No subject was lost to follow-up. There was no expulsion in either of the groups.

There was no significant difference in the complaints from both the groups but two subjects in Group A and one in Group B got IUCD removed.

Table 4: Third follow-up at 6 months

Third follow-up of subjects at (6 months)	Group A CuT380A N=74	Group B ML 375 N=76	Chi-square	p-value
No complain	72(76.60%)	75(80.64%)	0.32	0.573(NS)
Bleeding P/V	1(1.06%)	-	0.00	1.00(NS)
Pain abdomen	-	01(1.08%)	0.00	1.00(NS)
Pain and Bleeding	1(1.06%)	-	0.00	1.00(NS)

NS=Not Significant

We observed that expulsion rate was maximum at first follow up and then it decreased at subsequent follow-ups. Even request for removal by subjects decreased as time passed and side-effects tend to decrease. Repeated reassurance and counseling also helped a lot. The main reason for removal in both groups was pain and excessive bleeding. At the end of follow-up at 6-month, continuation rate of PPIUCD in Group A was 76.59% and 80.64% in Group B (Table 5).

Table 5: Continuation rate of PPIUCD

	Group A CuT380A N=74	Group B ML 375 N=76	Chi-square	p-value
Expulsion	8 (8.51%)	9(9.68%)	0.10	0.752(NS)
Removed	14(14.89%)	9(9.68%)	0.38	0.540(NS)
Failure (Pregnancy)	Nil	Nil	0.00	1.00(NS)
Continuation	72(76.59%)	75(80.64%)	0.42	0.518(NS)

NS=Not Significant

Discussion

In the present study, the subjects were in age group of 19-45 years with an average age of 24.98 years in Group A and 25.41 years in Group B. This study is comparable to study by El-Beltagy et al and Kumar M et al. [5,6]

Side effects in the form of pain, excessive bleeding or both and infection are reported in various studies. In the present study, 22% and 19% in Group A and Group B respectively had side effects. In comparison to study by Kumar M et al, the present study showed more number of side effects.[5] Study done by Kitiur and Kabadi and Ranjana et al showed higher rate of side effects compared to our study. [7,8]

The results of the present study showed that expulsion rate in Group A was 8% and was 9% in Group B, which was comparable to study conducted by Lara RR et al.[8] Study conducted by El-Beltagy et al, Kumar M et al, Sucak A et al, Celen and Sucak et al and Devi and Kaur showed a higher rate of expulsion.[5,6,10,11,12] The expulsion rate in post placental insertion are reported to be high as compared to interval IUCD. Also training and experience of provider also plays an important role along with proper fundal placement. Maximum expulsions occur in the first six weeks, which may be due to postnatal changes in the uterus and the same was observed in present study. In the present study, 14.89% of subjects in Group A and 9.68 % in Group B got their Cu T removed due to complaints of excessive bleeding per vaginum, pain abdomen or both which is higher as compared to study by Patel J et al.[13] This high expulsion rate may be due to this being a teaching hospital, insertions are done by junior residents and they have to be told the technique repeatedly and it needs experience to properly learn the correct technique.

No case of perforation was reported in both the groups which was similar to the study conducted by El-Beltagy et al and Kumar M et al.[5,6] Due to thick myometrium there is very less chance of perforation in post placental insertion. Other authors also did not report perforation with postplacental PPIUCD.[7,10,12,14]

Continuation rate in Group B is comparable to the study conducted by Lara RR et al and Kumar M et al.[9,6] Continuation rate in Group A was slightly less but comparable to study by Sucak et al.[10]

One subject in Group A had IUCD removed because she wanted to conceive as she had lost her baby and one subject underwent tubectomy and got PPIUCD removed.

Conclusion

It was concluded that both CuT 380A and ML 375 are safe and convenient as postplacental intrauterine contraceptive device with comparable efficacy. Both are available in government hospital free of cost. Thus, more and more women should be motivated for PPIUCD as we are promoting hospital deliveries and women are highly motivated for contraception at this point of time, which would help in prevention of unintended pregnancy. Counseling for PPIUCD should be done during antenatal visits which will lead to less removal rate as most of the myths and apprehensions of subjects accepting PPIUCD would already have been addressed.

References

1. Population of the world. 2024
2. Conde-Agudelo A, Rosas-Bermúdez A, Kafury-Goeta AC. Birth Spacing and the Risk of Adverse Perinatal Outcomes: A Meta-Analysis. The Journal of the American Medical Association. April 19, 2006: 295(15):1809-23.
3. GOI. PPIUCD Reference Manual. New Delhi: Family Planning Division Ministry of Health and Family Welfare Government of India; September 2013.
4. GOI. National Family and Health Survvey (NFHS-4), 2015-2016. New Delhi: Ministry of Health and Family Welfare (Government of India).
5. Kumar M, Aggarwal P, Gangania A, Dewan R. A study to evaluate and compare the expulsion and continuation rates of post placental insertion of Cu 375 and Cu T 380A in Indian women at a premier hospital in New Delhi, India. Int J Reprod Contracept Obstet Gynecol2017; 6(9): 3992-4000.
6. Kitiur S and Kabadi YM. Enhancing contraceptive usage by post-placental intrauterine contraceptive devices (PPIUCD) insertion with evaluation of safety, efficacy, and expulsion. Int J ReprodContraceptObstetGynecol2016; 1(1): 26-32.
7. Ranjana, Verma A, Chawla I. A follow up study of postpartum intrauterine device insertion in a tertiary health care centre. Int J ReprodContraceptObstetGynecol2017; 6(7): 2800-2805.
8. Lara RR, Menocal TG, Ramos PC, Velazquez RN. Random comparative study between intrauterine device Multiload Cu375 and TCu 380a inserted in the postpartum period. GinecolObstet Mex 2006; 74(6): 306-311.
9. Sucak A, Ozcan S, Çelen Ş, Çağlar T, Göksu G, Danışman N. Immediate postplacental insertion of a copper intrauterine device: a pilot study to evaluate expulsion rate by mode of delivery. BMC Pregnancy Childbirth 2015; 15(1): 202.
10. Çelen Ş, Sucak A, Yıldız Y, Danışman N. Immediate postplacental insertion of an intrauterine contraceptive device during cesearean section. Contracep_on2011; 84(3): 240-243.
11. Devi S and Kaur G. Comparative study of early postpartum IUCD insertion to interval IUCD insertion. JEvid Based Med Healtihc2016; 3(57): 2297-3000.
12. Patel J, Vyas R, Shah S, Parikh P. Evaluation of PPIUCD Insertion as a Method of Contraception in India. IOSR Journal of Dental and Medical Sciences 2017; 16: 49-53.
13. Jamkhandi SS and Tile R. Comparison of expulsion and complications of intrauterine device insertion in immediate post placental period with interval period: a prospective study. Int J ReprodContraceptObstetGynecol2017; 5(7): 2264-2268.
14. Gupta S, Trivedi SS, Biswas R. A comparative study of clinical outcomes of post placental insertion versus interval insertion of Copper T 380A intrauterine device. Int J Reprod Contracept Obstet Gynecol2015; 4(3): 765-776.