

**Original Article****Clinical Outcome of Intra caesarean Intrauterine Contraceptive (CuT380A) Insertion among Primiparous Parturients -An Experience at a Community Health Centre**

Authors

**Tanzeela Nazir<sup>1</sup>, Waseem Mushtaq Syed<sup>2</sup>, Sakina Akhter<sup>3</sup>**<sup>1</sup>Department of Health and Family Welfare, Government of Jammu and Kashmir, Jammu & Kashmir, India<sup>2</sup>Department of Surgery, SKIMS Medical College Hospital, Bemina, Jammu & Kashmir, India

Corresponding Author

**Dr Waseem Mushtaq Syed**

Department of Surgery, SKIMS, Jammu &amp; Kashmir, India

House no. 02, sector J-2, Irm Lane, Natipora, Srinagar, Jammu and Kashmir

Email: [syedwaseem32@gmail.com](mailto:syedwaseem32@gmail.com)**Abstract**

Worldwide around 115 million women have unmet needs of family planning. Launch of JSSKY by Government of India in 2011 to provide completely free and cashless services to pregnant women in institutional deliveries has led an opportunity for providing postpartum family planning services and an opportunity to overcome the unmet needs. Post partum intrauterine contraception device (PPIUCD) appears an ideal method for limiting and spacing births.

**Objectives:** The present study was taken to study the clinical outcome, acceptability and safety of PPIUCD in primiparous women who delivered by caesarean section at our health Centre – Maternity and Child Care Hospital (MCCH) Sherbagh Anantnag.

**Method and Materials:** This study was a prospective observational study carried out at Maternity and Child Care Hospital Anantnag – 200 primiparous women who delivered by caesarian section over a period of six months (June 2016- Dec. 2016) and had PPIUCD insertion and were willing to comply with the study protocol were involved in the study. All these subjects fulfilled the WHO standard Medical criteria for PPIUCD insertion. Follow up visits were scheduled at 1, 3, 6 and 12 months.

**Results:** A total of 200 women who underwent intra caesarean PPIUCD insertion were followed at 1, 3, 6 and 12 months. Majority of the women (88%) completed one year follow up. The most common complication observed in immediate postoperative period was fever (2.5%) followed by wound infection (1.5%) and UTI in (1%) women. The common adverse events noted during one-year follow up were menstrual complaints, excessive vaginal discharge and persistent pelvic pain. At the end of 1 year follow up there were a total of 10 expulsions, 18 removals leading to a gross cumulative expulsion, removal and continuation rates of 5%, 9% and 88% respectively.

**Conclusion:** Postplacental insertion of CuT380A is a safe and effective method of reversible contraception with low expulsion, high continuation and satisfaction rates.

## Introduction

Reduction in mortality of women is an area of concern for governments across the globe. India is the second most populated country in the world with an estimated population of 1.32 billion. India's maternal mortality stays at an alarming figure of 167/100000 live births, which causes many women to die from pregnancy and childbirth complications and this contributes to 20% of global maternal deaths every year<sup>[1]</sup>. Short birth to pregnancy intervals ( $\leq 18$  months) is associated with poor perinatal and maternal health outcomes<sup>[2, 3]</sup>. So women and their children may benefit from improved access to immediate postpartum contraception particularly to LARCS, such as IUD's. In 2005 under the National Rural Health Mission, a conditional cash transfer scheme named "Janani Suraksha Yojna (JSY)" was launched by Government of India on 1<sup>st</sup> of June, 2011, to provide completely free and cashless services to women who were pregnant, including normal delivery, cesarean delivery, drugs and diagnostics, transportation and neonatal health care up to 30 days postpartum<sup>[4]</sup>. This has resulted in a considerable increase in the institutional deliveries.

Insertion of an IUCD immediately after delivery is appealing for several reasons. Women are strongly motivated to begin contraception at this time, which also has the advantage of being convenient for both patients and health care providers. Assurance that a woman is not pregnant, side effects of IUCD like pain and bleeding merge with the after pains and Lochia of puerperium, no effect on breast milk unlike many systemic contraceptives, reduced risk of uterine perforation because of the thick wall especially during caesarean section. Postpartum IUCD offers the best alternative and is coitus independent<sup>[5]</sup>. Despite its advantages PPIUCD insertions suffers unpopularity in our country. Psychosocial reasons associated with its use like strong myths and misconceptions that its use is associated with infection, infertility perforation and migration are a major hindrance in its acceptance as a

contraceptive by the women. Hence the study was done to evaluate the clinical outcome in terms of acceptability and safety of PPIUCD insertions at caesarian section at our health Centre.

## Material and Methods

This was a prospective observational study carried out at a Community Health Centre in South Kashmir "Maternity and Child Care Hospital Anantnag" which is the second largest maternity Centre of its kind in Kashmir Valley receiving referrals from four major Districts of the Valley. A total of 200 women who had postpartum CUT380A insertion (Post placental) immediately at the time of caesarean section were followed at 1, 3, 6 and 12 months. Women were counseled regarding PPIUCD insertion either during antenatal visits after admission to the Hospital. Repeat counseling was done prior to caesarean section and a written informed consent was taken

## Inclusion Criteria

1. Women in Post placental period (in minutes of placental expulsion) at caesarean delivery.
2. Those willing for PPIUCD insertion and for participation in the study.
3. Women having Hb >8 gms/dl.

## Exclusion Criteria

1. Severe anaemia (Hb <8 gms/dl)
2. Active STI or high risk for same.
3. Early rupture of membranes
4. Manual removal of placenta.
5. On table PPH.
6. Liver or Renal dysfunction.
7. Diabetes mellitus.
8. IUFD.
9. Fever during labor and delivery. >38<sup>0</sup> F
10. Uterine malformations / Myomas

## Methods

After delivery of a placenta, uterus was exteriorized unless it wasn't feasible and stabilized by grasping it at the fundus. Uterine cavity was inspected for presence of any malformations. CuT380A IUCD was inserted

through the uterine incision and released at the fundus of the uterus with strings guided towards the lower uterine segment and uterus was closed with care as not to include the IUCD strings during uterine closure. Women were later discharged with an advise to come back any time if they had any of the following,

- Foul smelling vaginal discharge.
- Lower abdominal pain especially associated with fever or chills.
- Suspicious that IUCD has fallen at and excessive bleeding.

Follow up was done at 1, 3, 6 and 12 months. At each visit a detailed history regarding excessive vaginal bleeding, symptoms of infection, abdominal cramps, any other complaint was taken along with general physical and pelvic infection. In case the IUCD thread was not visible, USG was done. Parameters studied were continuation rate of intra-caesarean CuT380A and spectrum of adverse events associated with it, including expulsion, removal and failure rates.

## Results

200 primiparous women who had intra-caesarean PPIUCD insertion were followed at 1, 3, 6 and 12 months. Majority (> 90%) women were in the age group (21-25years) .72% women were literate. 45

Follow Up	1 Month	3 Month	6 Month	12 months
Continuation	n 199	n 194	n 187	n 176
Rate	% 100%	% 97 %	% 93.5%	% 88%

Follow up of Post placental intra-caesarean CuT380A insertion.

The adverse events are summarized as below:

	1 Month	3 Month	6 Month	12 months
1. Discharge P V	n 39 % 19.59	n 42 % 21.64	n 23 % 12.29	n 13 % 7.38
2. Menstrual Complaints	n 23 % 11.55	n 13 % 6.7	n 12 % 6.41	n 18 % 10.22
3. Pelvic Pain	n 21 % 10.55	n 27 % 13.91	n 15 % 8.02	n 9 % 5.11
4. Other Complaints	n 27 % 13.50	n 15 % 7.7	n 13 % 6.9	n 11 % 6.25
5. Pregnancy	0	0	0	0
6. Pelvic Infection				

patients were from low socio-economic class and 145 and 03 patients from middle and upper socioeconomic class respectively. 60 patients received counseling in antenatal period and 140 patients in early labor. 170 patients underwent emergency LSCS and 30 were posted electively for LSCS.

In the immediate post operative period the most common complication was fever (2.5%)94.5% women had a hospital stay of less than 4 days.

Table – 2 & Table – 3

**Table -2** Post Insertion Complications

COMPLICATIONS	NUMBER	PERCENTAGE
Fever	5	2.5%
Postpartum hemorrhage	0	0
Lochia with four	1	0.5%
Smell/Puerperal Sepsis		
Wound Infection	3	1.5%
Urinary Tract Infection	2	1%

**Table-3** Duration of Hospital Stay

Hospital Stay	Number	Percentage
< 4 Days	189	94.5%
4 – 8 Days	10	5%
> 8 Days	1	0.5%

At the end of one year there were 10 expulsions, 18 removals leading to gross cumulative expulsions, removal and continuation rate of 5%, 9% and 88% respectively.

	n 1	n 0	n 2	n 0
	% 0.5	% 0	% 1	% 0
String Visibility with CU+ in Uterine Cavity				
	n 125	n 141	n 145	n 149
	% 62.81	% 72.68	% 77.54	% 84.65
String Not Visible				
	n 74	n 53	n 42	n 27
	% 37.18	% 27.31	% 22.4	% 15.34
Spontaneous Expulsion				
Complete Expulsion	0	2	2	0
Partial Expulsion	3	2	1	0
Reason for Cu- +380A Removal				
Menstrual Compliant	1	0	2	1
Pelvic Pain	0	0	2	0
Psychosocial cause	2	3	2	4
Pelvic Infection	1*	0	0	0
Pregnancy/failure	0	0	0	0

\*Removal was done postpartum before one month follow-up due to puerperal sepsis.

## Discussion

Postpartum is the ideal time for family planning counseling. Accessibility to health care facility is more during this period especially in our country. This is the period when women are highly motivated and highly receptive to accept a family planning method. Also there are more chances to unwanted pregnancies as limited options are available to the breast-feeding mothers.

The intrauterine device is an effective, long lasting and reversible method of birth control [6, 7, 8]. PPIUCD insertion during cesarean section provides a long term but temporary contraception with minimal discomfort to the women [9]. It is being increasingly practiced after reported safety and lower expulsion rates following intra-cesarean IUCD insertion [10, 11, 12].

In China immediate postpartum IUCD insertion has been practiced since 1975. In a controlled trial comparing intra-cesarean IUCD insertion with non intervention controls only a few non significant complications were reported and no difference was found in puerperal morbidity or infection [11].

The most common immediate post insertion complication noted was fever in 2.5% women whereas 3 women (1.5%) had superficial wound infection. One patient had foul smelling lochia in which IUCD was immediately removed and higher antibiotics started. All other cases of fever,

wound infection and UTI (1%) responded to local antibiotics. These findings are in consistent with those reported by Celen et al & Erghi et al. [10, 12].

No women complained of excessive bleeding during the hospital stay. Majority of the women had hospital stay of less than 4 days (94.5%).

Ten patients had hospital stay of 4-8 days, out of which five had postpartum fever, three had wound infection and two women had their babies admitted in NICU.

Current guidelines recommend that asymptomatic IUCD users should return for a follow up visit at 3-6 weeks of insertion. [13].

Most of the studies have ensured the first follow up between 4-6 weeks [14]. In our study 88% of the women completed their 12 months follow up and the observed decrease in the number of women during follow up was due to terminal events like expulsion and removal. Good counseling and constant contact with the clients ensured optional follow up.

In present study there were total 10 expulsions, 4 complete and 6 partial making expulsions rate as 5%. Singh et al in their study have found an expulsion rate after PPIUCD insertion at 6.96%, which is also in accordance with the study done by Erghi. [10, 14].

In the present study no case of perforation occurred in a 12-month follow up. The possible reason for low perforation is due to their uterine

wall and inserters expertise, no case of perforation was reported in studies done in studies done by Kapp et al and Singal S et al.<sup>[9, 14]</sup>

88 % of women completed their 12-month follow up satisfactorily. Celen et al showed a continuation rate of 87.6% for PPIUCD insertion at 6 months interval<sup>[12]</sup> and Singal S et al reported a continuation rate of 91% at 1 year follow up in their study<sup>[14]</sup>.

Viability of strings is important as it assures both the IUCD user and the health care worker about the proper placement of the device and provides ease of removal. In the present study strings were visible in 62.81% at first follow up and the visibility increased to 84.65% at 12 months. In 27 women (15.34%) strings were not visible at the end of one year, despite ultrasonographic confirmation of the IUCD being in place. Eroghi *et al* reported missing string rate of 33% and 7.8% at 6 months and 12 months follow up respectively (after PPIUCD insertion)<sup>[10]</sup>. Singal S et al in their study have reported missing strings in 14.65% women at 12 month follow up.

The most common adverse events observed during follow up were menstrual complaints, excessive vaginal discharge and persistent pelvic pain. At first visit 11.55% of women complained of post insertion bleeding or spotting whereas 19.59% of women complained of excessive vaginal discharge. Wet smear of vaginal discharge was non-specific except in three which showed *Candida Albicans*. All women with pelvic infection were successfully treated with antibiotics. IUCD was removed in one woman who had foul lochia in her immediate postpartum period and was treated with higher antibiotics.

According to an ICMR study, on urban women, pelvic pain is a common symptom reported in 25% users following interval IUCD insertion<sup>[15]</sup>. In our study 10.55% of women complained of pelvic pain which was relieved by analgesics where as at one year follow up; around 5.11% complained of persistent pelvic pain.

No case of PID was reported in present study; this is in accordance with the study done by EI.

Beltagy et al who also did not reported any increase in incidence of PID after immediate postpartum IUCD insertion.<sup>[16]</sup>

The cumulative removal rate of IUCD at one year observed in the present study was 9%. Hayes et al reported 10% removal rate at 10 weeks<sup>[17]</sup>. Whereas Singal S et al reported a cumulative removal rate of 7% at one year follow up<sup>[14]</sup>.

The commonest cause of removal was psychosocial (61.11%) followed by menstrual complaints (22.22%) and persistent pelvic pain in 11.11% respectively.

There was no case of unintended pregnancy in our study. Previous studies have reported a cumulative pregnancy rate of less than 1/100 woman years within one year of the use<sup>[7, 8]</sup>.

Among the psychosocial causes that we faced were the myths and misconception regarding IUCD's likes its association with infections, infertility, perforation and migration. These misconceptions are to be removed through proper counseling and education of the general masses.

### Limitations

1. Small sample size.
2. Only primiparous women were followed.

### Conclusion

From the present study it was concluded that inter-caesarian section post-placental insertion of IUCD CuT380A is an effective, safe, convenient and long term reversible method of contraception. Majority of the women showed satisfaction with this contraceptive method provided to them. The beauty of the device is in the fact that it a "Use & Forget" type of contraception even well suited for illiterate women. Increased institutional deliveries in India provide an opportunity for offering family planning services to the women. Hence proper counseling and educating the women during their antenatal checkups can help more and more women to accept this method of contraception for their birth spacing.



**Bibliography**

1. Family Planning Division, Ministry of health and family welfare, Government of India, available at nrhm.gov.in, 2010.
2. Rutstein SO Effects of proceeding birth intervals on neonatal infant and under five year mortality and nutritional status in developing countries ; evidence from the demographic and health surveys. Int J Gynaecal Obstet. 2005; 89 Suppe 1:57-524.
3. Conde-Agudelo A, Rosas-Bermudez A, Kafury-Geota AC. Effects of birth spacing on maternal health: a systematic review. Am J Obstet Gynecol 2007; 194 (4):297-308.
4. National Rural Health Mission. "Guide lines for Janani-Shishu Suraksha Karyakram (JSSK)" new Delhi: Government of India, Ministry of Health and Family Welfare, Maternal Health Division 2011, 1-40.
5. Long term safety and effectiveness of copper releasing intrauterine devices; HRP external evaluation . 2003-2007; 6, 7.
6. Postpartum IUCD reference manual, New Delhi: Family Planning Division, Ministry of Health and Family Welfare, Government of India 2010.
7. Thonneau PF, Almont T. Contraceptive efficacy of intrauterine devices. Am J Obstet Gynecol, 2008; 198(3):248-53.
8. Kulier R, O'Brien PA, Helmerhost FM, Usher Palel M, D Arcangues C, Copper containing, framed intrauterine devices for contraception. Cochrane Database System Rev. 2007; (4); CD 005347.
9. Kapp N, Curtis KM. intrauterine device insertion during the postpartum period; a systematic review. Contraception 2009; 80(4):327-36.
10. Eroghi K, AKKUZUG, Vural G, Dilbaz B, Akin A, Takin L, et al. comparison of efficacy and complication of IUD insertion in immediate postplacental/ early postpartum period with interval period: 1 year follow up. Contraception 2006; 74 (5); 376-81.
11. Xu Jx, Reasche C, Burdan A. immediate postplacental insertion of the intrauterine device: a review of Chinese and the worlds experience. Adv. Contracept. 1994; 10 (1): 71-82.
12. Celen S, Moroy P, Sucak A, Aktulay A, Daniman N. clinical outcome of early postplacental insertion of intrauterine contraceptive device. Contraception 2004; 69 (4) : 278-82.
13. Long acting reversible contraception the effective and appropriate use of long acting reversible contraception. Regents Park, London: National Collaborating Centre for women's and children Health commissioned by the National Institute for Health and Clinical Excellence ; 2005. October 2005.
14. Singal S, Bharti R, Dewan R, Divya Dabral A, Batra A, Sharma M, Mittal P: Clinical outcome of postplacental copper + 380A insertion in women delivering by caesarean : J Clin Diagu Res. 2014; 8 (9): DC 01-4.
15. Indian Council of Medical Research Task Force study on Psychosocial factors affecting continuation and discontinuation of intrauterine device and oral pill in urban India. New Delhi : Indian Council of Medical Research, 1986.
16. EI Beltagy NS, Darwish EA, Kasem MS, Hefila NM. Comparison between copper +380IUD and Multiload 375 IUD in early postpartum insertion. Middle East Fertility Society J. 2010; 16: 143-8
17. Hayes JL, Civiak C, Goedkan P, Zieman M. A pilot clinical Trial of Ultrasound guided postplacental insertion of a levonorgestrel intrauterine device. Contraception 2007; 76 (4) : 292-96.