



## Post Placental Intrauterine Contraceptive Device – An Ultrasound Guided Followup Study

### KEYWORDS

IUCD, USG, PPIUCD, Cu-T

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**ABSTRACT** Objective(s) : To evaluate usefulness of USG in early diagnosis of PPIUCD expulsion and related complications in women with PPIUCD.

Method(s) : The study comprised of 96 postpartum women in whom PPIUCD insertion done. These were divided into two groups. Group-A - 48 women who delivered vaginally and Group-B - 48 women who underwent caesarean section. Both groups were followed up clinically and ultrasonographically at 48 hours, 6 weeks and 12 weeks.

Result(s) : Expulsion rate was higher in group-A than group-B. There is a significant higher expulsion rate when distance between fundus of uterus and Cu-T was >10 mm. Continuation rate of IUCD was higher among group-B.

Conclusion(s) : Immediate postpartum insertion of intrauterine device appear to be safe and effective method of contraception. USG guided follow-up of women with PPIUCD is good choice for early diagnosis of expulsions and complication.

### INTRODUCTION

Idea of immediate post partum intrauterine device insertion was first introduced in mid sixties in USA, but WHO standardized this method in 1983 & 1996. According to Medical Eligibility Criteria 2009<sup>1</sup>, immediate postplacental insertion of Cu-T is recommended in breastfeeding as well as non-breastfeeding mothers. Post placental insertion is defined as insertion of intrauterine device within 10 minutes of removal of placenta to 48 hours after delivery.

### METHODS

This comparative hospital based study was conducted in the Department of Obstetrics and Gynecology, SMS Medical College and Hospital, Jaipur from September 2011. The study was comprised of 96 postpartum women between 18 to 35 years delivering in SMS Medical College, Department of Obstetrics and Gynecology, Jaipur. They were followed-up for 12 weeks and divided into two groups: - Group A - 48 women who deliver vaginally, Group B - 48 women who undergo caesarean section.

**INCLUSION CRITERIA** - Woman must be willing for IUCD and who has just delivered or undergone caesarean section.

**EXCLUSION CRITERIA** - Woman having history of menorrhagia, signs and symptoms of STIs on pelvic examination, h/o previous ectopic pregnancy, rupture of membranes of more than 18 hours, unresolved PPH, extensive genital trauma, known distorted uterine cavity, past h/o malignant or benign trophoblastic disease, AIDS and not clinically well or on ART.

### METHOD OF STUDY

Ø After detailed history and informed written consent, CuT 380-A was inserted with the help of Kelly's forceps in vaginal delivery and manually during caesarean section. After the insertion of IUCD, woman was followed up at three different times:- Before hospital discharge, at 6 weeks postpartum and at 12 weeks postpartum.

➤ **Clinical Follow up** : Woman was asked about pain

abdomen, bleeding problems, spontaneous expulsion, missed thread, exclusive breastfeeding, resumption of menstruation and personal satisfaction.

➤ **Ultrasonography** : A transabdominal scan of pelvis was taken with full bladder at 48 hours, 6 wks & 12 wks postpartum to assess distance between fundus of uterus and horizontal T-limb of Cu-T (Myometrial thickness was not included).

### RESULTS

This study comprises of 96 post partum women and all the women enrolled in this study were fulfilling the inclusion and exclusion criteria of the study.

In the present study both groups were comparable in age distribution, religion, residence, literacy status and socio-economic status. The mean maternal age was  $25.7 \pm 3.9$  yrs in Group-A and  $25.0 \pm 3.3$  yrs in Group-B and 71.88% of women belonged to middle socio-economic status. 71.87% of women were Hindu and 71.87% of women, who accepted PPIUCD, were literate. 58.33% women who accepted PPIUCD in both groups were Para 2.

This study shows that insertion of intrauterine device after vaginal delivery is associated with statistically significant higher expulsion rate than intra-caesarean PPIUCD insertion (Table-1). It was found that removal due to bleeding and pain was same in both groups which was 4.16% and 6.25% respectively.

This study shows that expulsion rate is significantly high when the distance between fundus of uterus and Cu-T is more than 10 mm (Table-2). In this study continuation rate was 68.76% in Group-A and 85.42% in Group-B (Table-3).

### DISCUSSION

Postpartum intrauterine contraceptive device has been demonstrated to be safe and effective. In 2008<sup>1</sup>, The World Health Organization medical eligibility modified its classification of the PPIUCD as a category one contraceptive method during the first 48 hours postpartum.

Aim of this study was to evaluate the relation of postpartum IUCD insertion immediately after delivery & caesarean section and ultrasonography guided followup of women to determine its use in early diagnosis of its expulsion, migration and other complications.

Orawan Tangtongpet et al (2003)<sup>2</sup> conducted a prospective descriptive study and concluded that the distance between the internal uterine wall and the superior edge of the IUD at immediate post insertion and downward displacement may have influence on IUD expulsion.

Lettin Muller et al (2005)<sup>3</sup> concluded in their study that ultrasound assessment of IUD positioning performed better than clinical examination, which failed to detect expulsion after postpartum insertion in 75% of cases. They found that PPIUCD insertion during caesarean section is associated with lower expulsion rate than after vaginal delivery.

Lara Ricalde R et al (2006)<sup>4</sup> concluded that cumulative removal rates due to pain and bleeding were 4.9% and 4.8% and the removal rates for non-medical reason was 4.9% for post placental intrauterine device.

Nathalie Kapp et al (2009)<sup>5</sup> and concluded that removal rate of PPIUCD due to bleeding / pain and other medical reasons were same for women after vaginal delivery v/s intra-caesarean and it was 13.5% and 11.3% respectively. And expulsion rates were 17.1 ± 4.2% for vaginal insertion v/s 4.3 ± 2.9% for intra-caesarean insertion.

Farouk Fikry et al (2010)<sup>6</sup> concluded that continuation rates were 82.90% for postplacental insertion, 75% for postpartum insertion and 95.50% for intracaesarean group and cumulative continuation rate was 84.70%. They concluded that expulsion rate of PPIUCD after vaginal delivery was 9% and there was 0% expulsion in caesarean delivery group at 6 wks.

Elbeltagy et al (2010)<sup>7</sup> concluded that there was a direct relation between the incidence of IUD expulsion in early postpartum insertion and the IUD endometrial distance of the uterine fundus measured by USG with 10 mm as a cut-off point.

Celen et al (2011)<sup>8</sup> found that removal due to bleeding / pain and other medical reasons were 8.2% and 2.4% respectively. And continuation rates were 81.60% and 62% at 6 and 12 months respectively in their study on postplacental insertion of intrauterine device during caesarean section.

Manju Shukla et al (2012)<sup>9</sup> concluded that although the expulsion rate for immediate post-partum insertion was higher than for interval insertion, the benefits of providing highly effective contraception immediately after delivery outweigh this disadvantage, particularly in country where women have limited access to medical care.

Teal SB et al (2012)<sup>10</sup> studied a cohort of 136 young mothers from an adolescent pregnancy/postpartum programme and concluded that twelve-month continuation was 55%. Of the 87 removals, the most common reasons were expulsion (14.2%), pain (12.2%), bleeding (7.4%), pregnancy desire (6.8%) and pregnancy (4.7%), and rates did not differ by IUD significantly type.

**CONCLUSION**

Immediate postpartum insertion of intrauterine device ap-

pears to be safe and effective method of contraception. The method may be particularly beneficial in our setting where women do not come for postnatal contraception counseling and usage.

During this study there were no cases of uterine infections or perforations and no accidental pregnancies occurred. The expulsion rate is significantly higher in vaginal delivery group than intra-caesarean insertion of IUCD. The expulsion rate was higher where USG showed >10 mm distance between fundus of uterus and Cu-T.

On the basis of this study we can conclude that ultrasonographic guided follow-up of women with PPIUCD is a good choice for early diagnosis of expulsions and complications.

**TABLES**

**Table – 1**  
**Distribution of Cases According to Number of Expulsions and Number of Removals and Time Since Insertion**

Time Since Insertion	Number of Expulsions						Number of Removals					
	Group-A		Group-B		Total (Cumulative)		Group-A		Group-B		Total (Cumulative)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
48 hours	2	4.10	0	0.00	2/96	2.08	0	0.00	0	0.00	0	0.00
6 weeks	4	8.30	1	2.08	5/96	5.20	1	2.08	2	4.16	3	3.13
12 weeks	1	2.08	0	0.00	1	1.00	7	14.58	4	8.33	11	11.46
<b>Total</b>	<b>7</b>	<b>14.58</b>	<b>1</b>	<b>2.08</b>	<b>8</b>	<b>8.33</b>	<b>8</b>	<b>16.66</b>	<b>6</b>	<b>12.50</b>	<b>14</b>	<b>14.58</b>

P-value = 0.0267 P-value = 0.5630

**Table – 2**  
**USG Findings (Distance Between Fundus and Cu-T) and Number of Expulsions at 48 hrs, 6 wks and 12 wks**

Time Since Insertion	Distance Between Cu-T and Fundus of Uterus	Group-A	Group-B	Number of Expulsions	
				Group-A	Group-B
At 48 hours	<10 mm	37 (77.08%)	45 (93.75%)	0 (0.00%)	0 (0.00%)
	>10 mm	11 (22.91%)	3 (6.25%)	2 (4.16%)	0 (0.00%)
At 6 weeks	<10 mm	41 (89.13%)	46 (95.38%)	0 (0.00%)	0 (0.00%)
	>10 mm	5 (10.87%)	2 (4.17%)	4 (8.69%)	1 (2.08%)
At 12 weeks	<10 mm	40 (97.56%)	44 (97.78%)	0 (0.00%)	0 (0.00%)
	>10 mm	1 (2.44%)	1 (2.22%)	1 (2.44%)	0 (0.00%)

**Table – 3**  
**Continuation Rate of PPIUCD According to the Mode of Delivery**

Continuation of IUCD	Group-A		Group-B		Total (Cumulative)	
	No.	%	No.	%	No.	%
Removal Rate	8/48	16.66	6/48	12.50	14/96	14.58
Expulsion Rate	7/48	14.58	1/48	2.08	8/96	8.33
Continuation Rate	33/48	68.76	41/48	85.42	74/96	77.01

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