

# Examine the Efficacy and Safety of Immediate Postpartum Intrauterine Contraceptive Devices in C-Section and Vaginal Deliveries

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## ABSTRACT

**Objective:** To examine the safety and efficacy of immediate postpartum intrauterine contraceptive devices insertion after vaginal deliveries and cesarean sections.

**Study Design:** Prospective study

**Place & Duration of Study:** Department of Gynecology and Obstetrics Sughra Shafi Medical Complex Narowal from 1<sup>st</sup> January 2015 to 31<sup>st</sup> December 2015.

**Materials and Methods:** One hundred and forty patients were included. The ages were ranging from 20 to 45 years and detailed history including age, residence and socioeconomic status was taken. They were divided into two groups; Group A (vaginal) and Group B (cesarean). Each group comprised equal number of females i.e. 70. Immediate postpartum intrauterine contraceptive devices were inserted in all the patients. Outcomes were examined at follow-up and compared between both groups.

**Results:** Sixty (42.86%) patient's age range was between 20 to 30 years, 68 (48.57%) patients had ages 31 to 40 years and 12 (8.57%) patients had ages above 40 years. Complication rate was low. Perforation and pregnancy rate was 0%. Menstrual disturbance reported in 18 (14.75%) patients which was significantly higher in vaginal group. Expulsion rate was 5.73% and significantly higher in vaginal group  $p < 0.05$ . Removal was done in 12 (9.84%) cases and rate of removal of intrauterine contraceptive device was high in vaginal group. Continuation rate at follow-up was 85.24%.

**Conclusion:** The insertion of immediate postpartum intrauterine contraceptive devices was effective and safe method with low complications rate.

**Keywords:** Efficacy, Intrauterine contraceptive device, C-section, Vaginal delivery

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## INTRODUCTION

Each year, more than 100 million women make decisions about beginning contraception after child birth. Proper family planning programs and adequate methods of contraception are important tools to avoid many problems in our world.<sup>1</sup>

Contraception, socially recognized and accepted only in the last 30 years, is both an essential and a complicated part of modern life. Contraception has separated sex tablets from procreation and has provided couples greater control and enjoyment of their lives. It is a critical element in limiting population, thus preserving our planet's resources and maintaining quality of life for ourselves and our children. Contraception is both personal and a social responsibility. This could not be achieved by the simple contraceptive methods employed before the late 20<sup>th</sup> century. Greater effectiveness and ease of use required more complicated methods associated with greater consequences to our health.<sup>2</sup> Intrauterine contraception (IUC) is the most widely used reversible method of fertility regulation in the world. Over 100 million women worldwide use it for contraception.<sup>3</sup> In a recent study of postpartum unintended pregnancies 86% resulted from nonuse of contraception and 88% ended in induced abortions.<sup>4</sup> Continuation of these pregnancies are also associated with greater maternal complications and adverse perinatal outcomes. In India, 65% women in the first year postpartum have an unmet need for family planning.<sup>5</sup>

Hence, providing contraception in this sensitive period is important. Immediate postpartum family planning services need to be emphasized wherein the woman leaves the hospital with an effective contraception in place. Increase in hospital deliveries provides an excellent opportunity to sensitize women and provide effective contraception along with delivery services. An intrauterine contraceptive device (IUCD) has several advantages for use in postpartum period as it is an effective, long term reversible contraception, is coitus independent, and does not interfere with breastfeeding.

Cochrane reviews provide evidence of safety and feasibility of postpartum IUCD (PPIUCD) insertions in various settings.<sup>6,7</sup> However, studies have reported high expulsion rates (10.4–16.4%).<sup>8-10</sup> Most of the studies published were carried out more than a decade ago. Since then various advancements have been tried to decrease expulsion rates and improve PPIUCD acceptance. PPIUCD insertions via different routes (vaginal or cesarean) may have different outcomes at follow-up.

## MATERIALS AND METHODS

This prospective study was conducted at Department of Obstetrics & Gynecology, Sughra Shafi Medical Complex Narowal from 1<sup>st</sup> January 2015 to 31<sup>st</sup> December 2015. A total of 140 patients were included. The ages were ranging from 20 to 45 years and detailed medical history including age, residence and socioeconomic status was taken.

Women with acute purulent discharge, high individual likelihood of exposure to gonorrhoea or chlamydia, malignant or benign trophoblastic disease, suffering from AIDS and not clinically well or on antiretroviral therapy, between 48 hours and 6 weeks postpartum, chorioamnionitis, prolonged rupture of membranes >18 hours, postpartum endometritis/metritis and un-resolving post-partum haemorrhage were excluded. All the patients were equally divided into two groups, 70 patients in each group, Group A (vaginal) and Group B (cesarean). Intrauterine contraceptive device CuT-380A was inserted in all the patients. Outcomes such as perforation, menstrual disturbance, pregnancy, expulsion, removal and continuation rate was analyzed after follow-up and findings were compared between both groups. Follow up was taken at 6 months post insertion of IUCD. All the data was analyzed by SPSS 20. Frequency and percentages were recorded. P. value <0.05 was considered significant.

## RESULTS

Out of 140 patients, 60 (42.86%) patient's (29 vaginal, 31 cesarean) age range was between 20 to 30 years, 68 (48.57%) patients (34 vaginal, 34 cesarean) had ages between 31 to 40 years and 12 (8.57%) patients (7 vaginal, 5 cesarean) had ages above 40 years. 90 (64.29%) patients (44 vaginal, 46 cesarean) had urban residency and 50 (35.71%) patients (26 vaginal, 24 cesarean) had rural residency. 82 (58.57%) patients (40 vaginal, 42 cesarean) were literate while 58 (41.43%) patients (30 vaginal 28 cesarean) were illiterate (Table 1).

One hundred twenty two (87.14%) patients were completed the follow-up and 18 (12.86%) patients lost the follow-up. At 6 months follow-up out of 122 patients 60 patients of vaginal group and 62 patients of cesarean group were analyzed. No perforation and pregnancy was observed in both groups. 82 (67.21%) patients had no complaint regarding IUCDs. Menstrual disturbance reported in 18 (14.75%) patients in which 11 (9.01%) patients belong to vaginal group and 7 (5.74%) patients had intra-cesarean insertions. Pelvic pain was reported in 12 (9.84%) patients (7 vaginal, 5 cesarean). Expulsion rate was 5.73%. Incidence of expulsion was high in vaginal group 5 (4.10%) than the intra-cesarean insertion 2 (1.64%) p value <0.05. Removal was done in 12 (9.84%) cases (8 vaginal, 4 cesarean), rate of removal of IUCD was high in vaginal group p-value <0.05. Continuation rate at follow-up was 84.43%. [Table 2]

Table 1: Demographic information of the patients

Variable	Group A (n=70)		Group B (n=70)	
	No.	%	No.	%
<b>Age (years)</b>				
20 -30	29		31	
31 -40	34		34	
>40	7		5	
<b>Residence</b>				
Urban	44		46	
Rural	26		24	
<b>Education</b>				
Literate	40		42	
Illiterate	30		28	

Table 2: Outcomes at final follow-up

Outcome	Group A	Group B	Total (%)	P value
No complaint	39	43	82 (67.21)	N.S
Menstrual abnormality	11	7	18 (14.75)	< 0.05
Pelvic/Back pain	7	5	12 (9.84)	>0.05
Infection	1	1	2 (1.64)	N.S
Expulsion	5	2	7 (5.74)	<0.05
Removal	8	4	12(9.84)	<0.05
Continuation Rate	49	54	103(84.43)	N.S

## DISCUSSION

Unwanted pregnancy is still a major concern in our country. Family planning methods need to be strengthened to achieve limited family size to improve overall maternal and child health. Postpartum intrauterine contraceptive device (PPIUCD) seems to be a safe, long acting, easily accessible, highly effective and reversible contraceptive method for postpartum lactating women. It is best accepted by the parturient women who are unable to return to health care centers for contraceptive advice. Present study was conducted aimed to examine the safety and efficacy of PPIUCDs in vaginal and cesarean deliveries. In our study total 140 IUCD were inserted 70 after vaginal deliveries and 70 intra-cesarean insertions were done. Out of 140 patients 60 (42.86%) patient's ages were between 20 to 30 years, 68 (48.57%) patient's ages were between 31 to 40 years and 12 (8.57%) patients had ages above 40 years. We found that most of the patient's ages were above 25 years and were willing for IUCDs. These results show similarity to some other studies in which the most common age group of patients regarding PPIUCDs was 25 to 35 years.<sup>11,12</sup> In our study we found that most of the patients 64.29% had urban residency while 35.71% patients had rural residency. Many of studies show similarity to some previous studies in which women had urban residency were more likely interested in family planning and use of IUCD.<sup>13,14</sup>

In present study the follow up rate was 87.14% in which 20% follow up was taken by telephonically. A study conducted by Sharma et al<sup>15</sup> reported overall follow-up rate was 84.95%. At 6 months follow-up we found no case of perforation and no case of pregnancy. Many of previous studies demonstrated 0% of pregnancy after insertion of IUCDs.<sup>16,17</sup> In present study 82 (67.21%) patients had no complaint regarding IUCDs. Menstrual disturbance reported in 18 (14.75%) patients in which 11 (9.01%) patients belong to vaginal group and 7 (5.74%) patients had intra-cesarean insertions. Pelvic pain was reported in 12 (9.84%) patients (7 vaginal, 5 cesarean). A study conducted by Shukla et al<sup>18</sup> using Cu-T200B in immediate post-partum period, 27.23% women were found to have heavy bleeding during menstruation. Neither of the women in their study complained of pain in lower abdomen or abnormal vaginal discharge nor did any of them had any sign of PID.

In our study we found expulsion rate was 5.73%. Incidence of expulsion was high in vaginal group 5 (4.10%) than the intra-cesarean insertion 2 (1.64%) p value <0.05. Removal was done in 12 (9.84%) cases (8 vaginal, 4 cesarean), rate of removal of IUCD was high in vaginal

group p-value <0.05. 3 patients want removal due to personal reasons, 2 patients due to infection and 7 patients want removal due to abnormal vaginal discharge or irregular bleeding. Multiple previous studies were comparable to our study in which expulsion rate was 5 to 5.50% and removal rate was 10 to 20%.<sup>19</sup> Other studies using CuT-380A have reported IUCD removal due to bleeding/pain as 6-8%.<sup>20,21</sup> Difference in types of IUCD could possibly explain the different rates of bleeding problems. In our study the continuation rate at follow-up was 84.43%. These results show similarity to some previous studies in which continuation rate was 80 to 85%.<sup>22,23</sup>

## CONCLUSION

The postpartum intrauterine contraceptive device is very effective, safe, and reversible contraceptive method which provides contraceptive effect soon after birth. Especially in those patients who have limited access to health care facilities and infrequent post partum care, this method can be considered as the best for them.

## REFERENCES

1. Population of the world. 2018; Ref.: <https://goo.gl/DakscN>
2. Pakistan demographic and health survey. Ref.: <https://goo.gl/XLqk7U>
3. Dirk W, Norman DG. Reversible, Long-Action Reproductive Control with Frameless IUD for Intrauterine Insertion. *J Gynecol* 2017; 2: 000S1005.
4. Moore Z, Pfitzer A, Gubin R, Charurat E, Elliott L, et al. Missed opportunities for family planning: an analysis of pregnancy risk and contraceptive method use among postpartum women in 21 low- and middle-income countries. *Contracept* 2015; 92: 31-9.
5. Wildemeersch D, Goldstuck ND, Hasskamp T. Current status of frameless anchored IUD for immediate intrauterine insertion. *DEV pErioDmED* 2016; 20: 9-17.
6. Bühling KJ, Zite NB, Lotke P, Black K, INTRA Writing Group. Worldwide use of intrauterine contraception: a review. *Contraception* 2014; 89:162-73.
7. Balasubramaniam S, Kumar S, Sethi R, Charurat E, Lalchandani K, et al. Quasi-experimental Study of Systematic Screening for Family Planning Services among Postpartum Women Attending Village Health and Nutrition Days in Jharkhand, India. *Int J Integr Care* 2018; 18: 7.
8. Bhutta SZ, Butt IJ, Bano K. Insertion of intrauterine contraceptive device at caesarean section. *J Coll Physicians Surg Pak* 2011; 21: 527-530.
9. Kittur S, Kabadi YM. Enhancing contraceptive usage by post placental intrauterine contraceptive devices (PPIUCD) insertion with evaluation of safety, efficacy and expulsion. *Int J ReprodContraceptObstetGynecol* 2012; 1: 26-32.
10. Tomar B, Saini V, Gupta M. Post-partum intrauterine contraceptive device: acceptability and safety. *Int J ReprodContraceptObstetGynecol* 2018; 7: 2011-7.
11. Lester F, Kakaire O, Byamugisha J, Averbach S, Fortin J, et al. Intrauterine insertion of the Copper T380A versus 6 weeks post-caesarean: a randomized clinical trial. *Contraception* 2015; 91: 198-203.
12. Cleland, J, Shah, I and Benova, L. A fresh look at the level of unmet need for family planning in the postpartum period, its causes and program implications. *IntPerspect Sex and Reprod Health* 2015; 41: 155-62.
13. Ragab A, Hamed HO, Alsammani MA, Shalaby H, Nabeil H, et al. Expulsion of Nova-T380, Multiload 375, and Copper-T380A contraceptive devices inserted during cesarean delivery. *Int J GynaecolObstet* 2015; 130: 174-8.
14. Levi EE, Stuart GS, Zerden ML, Garrett JM, Bryant AG. Intrauterine device placement during caesarean delivery and continued use 6 months postpartum: a randomized controlled trial. *ObstetGynecol* 2015; 126: 5-11.
15. Turok DK, Leeman L, Sanders JN, Thaxton L, Eggebroten JL, et al. Immediate postpartum levonorgestrel intrauterine device insertion and breast-feeding outcomes: a noninferiority randomized controlled trial. *Am J ObstetGynecol* 2017; 217: 665.e1-665.e8.
16. Sharma A, Gupta V, Bansal N, Sharma U, Tandon A. A prospective study of immediate postpartum intra uterine device insertion in a tertiary level hospital. *Int J Res Med Sci* 2015;3:183-7.
17. Kumar S, Sethi R, Balasubramaniam S, Charurat E, Lalchandani K, Semba R, et al. Women's experience with postpartum intrauterine contraceptive devices use in India. *Reprod Health* 2014;11:32.
18. Hooda R, Mann S, Nanda S, Gupta A, More H, Bhutani J. Immediate postpartum intrauterine contraceptive device insertions in caesarean and vaginal deliveries: a comparative study of follow-up outcomes. *Int J Reproduc Med* 2016;17: 16-20.
19. Shukla M, Qureshi S, Chandrawati. Post placental Intrauterine device insertion: a five year experience at a tertiary care center in north India. *Indian J Med Res* 2012;136:432-5.
20. Soni M, Sharma V, Bhat MP, Sharma A. Postplacental postpartum intrauterine contraceptive devices insertion: our scenario. *Int J ReprodContraceptObstetGynecol* 2016;5:766-9.
21. Halder A, Sowmya MS, Gayen A, Bhattacharya P, Mukherjee S, Datta S. A prospective study to evaluate vaginal insertion and intra cesarean insertion of postpartum intrauterine contraceptive device. *J ObstetGynecol India* 2016;66(1):35-41.
22. Levi EE, Stuart GS, Zerden ML, Garrett JM, Bryant AG. Intrauterine device placement during caesarean delivery and continued use 6 months postpartum: a randomized controlled trial. *Obstet Gynecol.* 2015; 126: 5-11.
23. Gupta A, Verma A, Chauhan J. Evaluation of PPIUCD versus interval IUCD (380A) insertion in a teaching hospital of Western UP. *Int J ReprodContraceptObstetGynecol* 2013; 2: 204-8.