Original Article

Comparison of Complications of Postpartum IUCD Insertion with Interval IUCD Insertion in Terms of Complications like Expulsion Rate and Bleeding

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Abstract

Objective: The study's goal was to compare postpartum consequences with complications from interval IUCD insertion in terms of expulsion rate and haemorrhage.

Methodology: This was a prospective randomized controlled study conducted at Gynaecology and Obstetrics Department Unit 4, Bolan Medical Complex Hospital, Quetta from 01-07-2019_31-12-2019. A total of 102 women were included in the study (Pregnant women at term between 37-42 weeks of gestation, having any parity, age from 20-40 years visiting for delivery, which were interested for PPIUD insertion after delivery were included in the study). The study was started after taking approval from the hospital ethical committee. All the women were briefed and motivated in antenatal period or latent phase of labour for PPIUCD insertion. The patients who were included in the study were randomly divided into two equal groups of 51 in each group. In group A IUCD (cuT 380 A) was inserted immediately after delivery within 48 hours and in group B the IUCD was inserted after 48 hours. After that bleeding and expulsion rates were noted at 3 visits, including 15 days, 6 weeks and 6 months. All the data were analyzed using SPSS 16.

Results: A total of 102 patients (51 in each group) were included in the study. The mean age of the patients was found to be 28.85 ± 4.83 years as overall. Gestational age of the patients was found as 38.0 ± 1.32 weeks in group A while 38.37 ± 1.21 weeks in group B. Also, the parity of the patients was assessed and was found as 3.84 ± 2.61 in group A while 3.92 ± 2.09 in group B.

Conclusion: The IUCD expulsion rate at 15 days and 6 months was significantly lower in patients having IUCD at postpartum than in those having interval IUCD. Therefore, on the basis of this study, we recommend that IUCD may be better inserted immediately after removal of placenta to prevent further complications.

Keywords: IUCD; Post-partum; Bleeding; Expulsion; post partum intrauterine contraceptive device; Complications.

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Introduction

Insertion of Intrauterine contraceptive device (IUCD) is one of the safest methods of contraception and also is one of the most commonly used methods employed. However, there is a debate regarding the timing of the insertion of the IUCD, whether in post-partum period or after some interval. The main outcomes in this study were bleeding and expulsion of IUCD at 3 visits including 15 days, 6 weeks and 6 months. We had found that the difference in both groups was significant for the IUCD expulsion rate at 15-day and 6 months visit.

Preventing unwanted and closely spaced pregnancies within the first year after childbirth is known as postpartum family planning (PPFP). For postpartum women to be able to avoid an unintended pregnancy, a variety of reliable contraceptive options are required. The mortality and morbidity of both mothers and their children are higher when births are spaced closely together.One of the oldest and most affordable types of contraception is the intrauterine contraceptive device (IUCD), that prevents pregnancy.[1,2]

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The postpartum period is the best time to discuss contraception with a patient, especially if the woman with limited access to healthcare. Given the high rates of illness and mortality during the postpartum period, it is essential that both women and their newborns receive an individualised and comprehensive package of health services.[3]

More than 65,000 women worldwide have had PPIUCDs placed, and as more countries implement PPIUCDs into their family planning programs, the number of procedures is rising.[4] The problems of this surgery are rising along with the number of PPIUCD insertions.[4]

The insertion of an IUD immediately after delivery is reasonable for several reasons. The woman is not pregnant and is motivated for contraception, and the setting is convenient for both the woman and the provider. The timing of insertion is important as it influences the risk of expulsion. Post-partum insertion should take place within 48 hours of delivery, as the risk of expulsion is higher if inserted after 48 h of delivery.[5,6]

When PPIUCD and interval IUCD were compared for expulsion rate and bleeding, it was shown that PPIUCD had a considerably greater expulsion rate than interval insertions (16% vs. 2%).[7] The number of removal of IUCD was almost similar in both groups (5.6% v/s 6.0%) but bleeding as a cause of removal was significantly more in the interval group (23.5% v/s 88.5%).[7]

Studies show many advantages of IUCD insertion in the postpartum period. But the data is lacking in our population about the consequences of immediate (within 48 hrs) and interval (after 48 hrs) postpartum IUCD insertion in terms of complications related to IUCD insertion. The current study aim to compare complications such as expulsion rate and bleeding in the immediate and interval IUCD insertion groups, so that a more suitable time for IUCD insertion can be identified in our study population so that patients do not face any complications, more hospital visits and compromise on quality of life financially and psychologically.

Methodology

It was a prospective, randomized, case-control study that conducted from January 1, 2019, to December 31, 2019, at the Gynecology and Obstetrics Department Unit 4 of the Bolan Medical Complex Hospital in Quetta. The method was non-probability consecutive. The WHO sample size calculator was used for calculating the sample size.

Level of significance 5%, Power of test 80%, anticipated population proportion (expulsion rate in PPIUCD).[6] So a total of 102 participants were included in study consisting of 51 in each group.

Pregnant women at term between 37-42 weeks of gestation, having any parity, age from 20-40 years visiting for delivery, which were interested for PPIUD insertion after delivery were included in the study. Women presenting with history of Chorioamniotis, Postpartum sepsis, Rupture of membrane > 18 hours, Unresolved PPH, Extensive genital trauma (due to disruption in repair) were excluded from the study to control the confounding factors. Data Collection Procedure In this randomized controlled trial, a total of 102 women were included in the study. Study was started after taking approval from hospital ethical committee. All the women were briefed and motivated in antenatal period or latent phase of labour for PPIUCD insertion. The patients which were included in the study were randomly divided into two equal groups of 51 in each group. On group A IUCD (cuT 380 A) was inserted immediately after delivery within 48 hours and in group B the IUCD was inserted after 48 hours.

IUCDs were inserted intrauterine as soon as the placenta was delivered vaginally using placental forceps in all cases where this method was approved.

IUCD was inserted gently, using no touch technique, until slight resistance was felt against the back wall of the lower uterine segment. The uterus was elevated by keeping one hand just above the pubic symphysis through the abdominal wall and was pushed superiorly to extend the lower uterine segment. Forceps were moved towards fundus, following the contour of the uterine cavity. The cervix was examined after the procedure.

All cases were followed at 15 days, six weeks, and six months after the procedure for any complications like expulsion of IUCD and heavy menstrual bleeding in both groups. The final outcome was assessed after 6 months to assess the expulsion rate and heavy menstrual bleeding as mentioned in operational definition. All the demographic information were entered into the predesigned proforma.

Data was entered and analysed using Statistical Package for the Social Sciences (SPSS) version 16.0. Mean±SD was calculated for age, gestational age, and parity. Frequency & percentage % was calculated for educational status, expulsion, and heavy bleeding at 15th day, 6 weeks and 6 months. Chi-square test was

used to compare the expulsion rate and heavy bleeding between both groups in 6 months. Effect modifiers were controlled through stratification of age, gestational age, parity, socioeconomic status and educational status. Post stratification chi- square test was applied. P-Value ≤ 0.05 as significant.

Results

A total of 102 patients (51 in each group) were included in the study. The mean age of the patients was found to be 28.85 ± 4.83 years as overall. The mean age of the patients in group A was found to be 28.21 ± 5.62 years while in group B, it was found to be 29.29 ± 3.09 years. Patients were further categorized according to age into 2 groups.

Gestational age of the patients was found as 38.0 ± 1.32 weeks in group A while 38.37 ± 1.21 weeks in group B. Patients were further categorized according to gestational age into 2 groups. Also parity of the patients was assessed and was found as 3.84 ± 2.61 in group A while 3.92 ± 2.09 in group B. Patients were further categorized according to parity into 2 groups. The educational status of the patients in both groups is shown in figure 1.

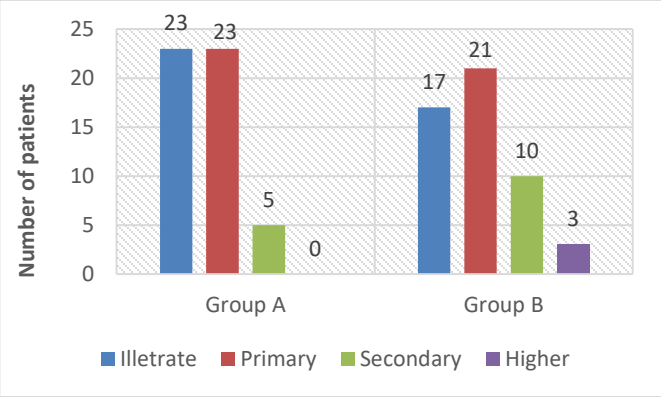

Figure 1. Distribution of patients in both groups according to educational status.

The main outcomes in this study were bleeding and expulsion of IUCD at 3 visits including 15 days, 6 weeks and 6 months. We had found that the difference in both groups was significant for IUCD expulsion rate at 15 days and 6 months visit. All the data is given in Table I.

Bleeding and IUCD expulsion were stratified according to age and parity in tables II and III respectively.

Discussion

Table I: Comparison of outcomes of the study in follow up visits in both groups(n=102)

ASA Status	Group-A (n=51)		Group-B (n=51)		P-Value
	Yes	No	Yes	No	
Follow up at 15th day					
Bleeding	3	48	5	46	0.358
IUCD expulsion	20	31	0	51	0.000
Follow up at 6 weeks					
Bleeding	3	48	5	46	0.358
IUCD expulsion	1	50	5	46	0.102
Follow up at 6 months					
Bleeding	3	48	6	45	0.244
IUCD expulsion	0	51	5	46	.028

Table II: Stratification of Bleeding according to age in both groups at 6 months visit

Age Groups	Groups	Bleeding		Total	P-Value
		Yes	No		
21-30 Years	Group A	3	46	49	0.461
	Group B	5	44	49	
	Total	9	90	98	
31-40 Years	Group A	0	2	2	0.248
	Group B	1	1	2	
	Total	1	3	4	

Table No III: Stratification of IUCD expulsion according to Parity in both groups at 6 months visit

Parity	Groups	Expulsion		Total	P-Value
		Yes	No		
1-3	Group A	0	28	28	0.135
	Group B	2	24	26	
	Total	0	54	54	
4-5	Group A	0	11	11	0.347
	Group B	1	12	13	
	Total	1	23	24	
>5	Group A	0	12	12	0.140
	Group B	2	10	12	
	Total	2	22	24	

Insertion of an IUCD can occur at varying times in relation to the latest pregnancy to help the patient have long acting reversible contraception. Postpartum placement of an IUD, especially within the first 48 hours has the advantage for being reliable and effective contraception at the point of care. Usually motivation for effective contraception may be high after delivery. However, insertion of an IUD before four weeks postpartum may increase the risk of uterine perforation, infection, and bleeding as well as expulsion.[8,9] In Shah et al., the greatest number of IUCDs, 128 (51.2%), were placed in the immediate postpartum period, followed by post placental 99 (39.6%), and 23 (9.2%) were inserted intra caesarean.[10]

The main outcomes in this study were bleeding and expulsion of IUCD at 3 visits, including 15 days, 6 weeks, and 6 months. We had found that the difference in both groups was significant for the IUCD expulsion rate at 15

days and 6 months visit. Expulsion rate in a study was 5.17 %.[11] This was similar to a multicounty research conducted in Belgium, Chile, and the Philippines, which found that the rate of expulsion at one month ranged from 4.6 to 16%. During the postpartum period, delay in initiating contraception is common. Effective contraception after childbirth helps lengthen birth intervals and thus improves the health of mothers and infants. Preventing unintended pregnancies helps avoid their financial, psychological, and health costs. A longer birth interval decreases the risk of major maternal complications including death, third-trimester bleeding, puerperal endometritis, and anemia. The World Health Organization (WHO) suggested waiting 24 months after a delivery before attempting the next pregnancy to lower the risk of poor maternal and newborn health outcomes.[12,13]

A analysis of 15 research indicated that inserting an IUD within 10 minutes of placental delivery was safer than later postpartum time periods and interval insertion, when compared to delayed postpartum insertion. Immediate postpartum IUD implantation showed lower expulsion rates, but higher rates than interval insertion. Compared to immediate insertion after vaginal delivery, immediate insertion after caesarean delivery showed decreased ejection rates. When compared to delayed postpartum insertion, immediate postpartum IUD implantation had lower expulsion rates but higher rates than interval insertion. Compared to immediate insertion following vaginal delivery, immediate insertion during caesarean delivery showed reduced expulsion rates.[14]

Partially ejected IUDs should be removed as soon as possible considering their contraceptive effectiveness is unclear and may cause problems in rare cases.In a study conducted by Çelen Ş, found the 6- and 12 months cumulative rates of expulsion to be 10.6 and 17.6 per 100 women, respectively, with about one third of the subjects having complete expulsion.[15] In another study including both cesarean (26%) and vaginal (74%) deliveries, TCu 380A model IUD was inserted immediately after the delivery of placenta, and a cumulative 1-year expulsion rate of 12.3 per 100 women was observed.[16] Another factor influencing the expulsion rate might be the timing of the IUD placement. In a study comparing immediate, early (10 min to 48 h) and interval IUD insertions based on the patient's preference, the lowest 12-month cumulative expulsion rate occurred in the interval group (6.9%), followed by the immediate (36.9%) and early (69.8%) groups.[17]

The impact of various IUD insertion times, however, has not been thoroughly examined in randomised clinical studies. Also, there were some limitations in my study. It was a single centre trial focusing only on a few complications and the expulsion of IUCD. However. Further studies are needed to be conducted over the topic to delineate other aspects also.

Conclusion

The IUCD expulsion rate at 15 days and 6 months was significantly less in patients having IUCD at postpartum than those having interval IUCD. Therefore, based on this study, we recommend that IUCD may be better inserted immediately after removal of placenta to prevent further complications.

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