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ORIGINAL ARTICLE

Efficacy of Immediate Post-Partum Intrauterine Contraceptive Device in a Tertiary Care Hospital

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ABSTRACT

Objective: To determine efficacy of post-partum intrauterine contraceptive device (IUCD) in women presenting to a tertiary hospital.To compare efficacy of post-partum Intrauterine device between vaginal Insertion and Intra-Cesarean Insertion.

Material and Method: A Prospective, cross sectional study was conducted at Department of Gynecology and Obstetrics Unit III, Abbasi Shaheed Hospital, Karachi from Jan2020 to June, 2020.

Total 234 patients were included in this study. Patients fulfilling the inclusion criteria were enrolled in the study after taking Informed consent. Copper containing IUCD was inserted. Follow up was done at 6weeks and six months of delivery. All women were counseled to report missing threads, heavy vaginal bleeding, and vaginal discharge with pain in abdomen on each visit during follow-up. Abdominal, speculum and vaginal examinations was done. Efficacy was determined by the expulsion rate. Statistical analysis was done by SPSS Version 20.

Results: Out of total insertions 103(44.01%) were intra caesarean and 131 (55.98%) IUCDs were placed after vaginal delivery. Symptoms of unusual vaginal discharge were reported by 28(11.9%) women, missing thread were reported by 67(28.5%), abdominal pain was reported by 92(39.2%) and heavy bleeding was reported by 44(18.8%) patients at follow-up. efficacy of vaginal insertion was 79(60.30%) and intra-cesarean insertion of PPIUCD was 65(63.10%).

Conclusion: It can be concluded that PPIUCD in the field of postpartum family planning is a promising approach. Whatever may be the mode of delivery, PPIUCD is safe and effective.

Keywords: Efficacy, Vaginal Insertion, Post-Partum Intrauterine Contraceptive Device, missing threads

INTRODUCTION

The World Health Organization (WHO) recommended that birth to pregnancy interval should be 24 months .Studies show that pregnancies taking place within 24 months of a previous birth have a higher risk of adverse outcomes like abortions, premature labor, post-partum Hemorrhage, low birth weight babies, fetal loss and maternal death. Pakistan is a developing country with limited resources and a very high maternal mortality due to preventable pregnancy-related complications.[1] Mostly our population belongs to rural areas. The intrauterine device (IUD) is one of the most effective of the modern reversible methods of contraception for an extended period of time. [2] Worldwide, the rate of IUD use is 14%, with the highest rates of use in Asia (18%), followed by Europe (12%) and in Pakistan (2.5%).[3-5]

Insertion of an IUD immediately after delivery is appealing for several reasons. The woman is not pregnant and is motivated for contraception and the setting is convenient for both woman and provider. [6] For women with limited access to medical care, the delivery affords a unique opportunity to address the need for contraception. Immediate post placental insertion of an IUCD may avoid the discomfort related to interval insertion and any bleeding may be disguised by lochia.[7] Use of IUCD is simpler, less expensive and immediately reversible.[8] Sultana et al study included women who had multiload insertion immediately after delivery of placenta in vaginal or caesarean delivery and expulsion rate were 6.6% and 1.3% respectively. In 59 (61.45%) women there was no complaint regarding PPIUD. Efficacy found in term of no complaint 60% in vaginal insertion group and 63.41 % among intra-cesarean insertion group.[9] Postpartum period is golden time in life of woman to start family planning as women in low socioeconomic society have lack of opportunity to get medical access .So the present study were planned to evaluate the efficacy of Insertion of Post-Partum intrauterine contraceptive device and compare the efficacy of Vaginal Insertion and Intra-Cesarean Insertion of Post-Partum Intrauterine Contraceptive Device.

MATERIAL AND METHODS

This Prospective cross sectional study was conducted at Department of Gynaecology and Obstetrics Unit III, Abbasi Shaheed Hospital, Karachi from Jan2020 to June2020 after ethical approval. The sample size for the study were n=234 patients. The sample size for was calculated by using the WHO software where, level of significance=5%, Anticipated population proportion efficacy of Vaginal Insertion =60% and margin of error= 6%.[10]Samples were collected by consecutive sampling technique. All Women 20-40 years of age delivering vaginally or by caesarean section and insertion of IUCD in the postpartum period were included.

Women with history of previous contraception with IUCD or oral contraceptive pills, postpartum hemorrhage, pre labour rupture of membrane > 18 hours or obstructed labour or meconium stained liquor, Women having history of distorted uterine cavity by fibroid or congenital uterine malformation Grand multipara (A woman who has given birth 5 or more times) were excluded .

Informed consent were taken from each patient, Brief history were taken. All women participate in research copper containing IUCD were inserted by proper trained doctor. All women were given antibiotics and mefanamic acid for 5 days. Follow up were done at 6 weeks and six months of delivery. All women were counseled to report missing threads, heavy vaginal bleeding, pussy or smelly discharge with pain in abdomen on each visit during follow-up. Abdominal, speculum and vaginal examinations were done. If the thread will not be seen and there were no history of expulsion of IUCD, X-ray pelvis was done to locate the misplaced IUCD. Efficacy was determined by the expulsion rate. Data were analyzed on SPSS Version 20. Mean and standard deviations were calculated for maternal age, gestational age and parity. Frequencies and percentages were calculated for educational status, socioeconomic status, residence, mode of delivery Missing thread, Pussy discharge, Abdominal pain, Heavy bleeding per vagina and efficacy. Efficacy was compared in vaginal and intra- cesarean insertion by using chi-square test. Effect modifiers were controlled through stratification of maternal age, gestational age, parity, educational status, socioeconomic status and residence to see the effect of these on the outcome variables. Post stratification chi square test were applied taking p-value of ≤ 0.05 as statistically significant.

RESULTS

A total of 234 immediate postpartum IUCD insertions were studied. Mean age of the patients was 28.55±6.12years, Mean gestational age of the patients was 36.5±2.7weeks, parity was 3.5±1.5, and BMI was 26.6±3.9. Women from urban areas were120 (51.28%) while114 (48.71%) were from rural areas. Majority of population in our study had primary education as shown in table 1.

Out of total 103 (44.01%) insertions were intracaesarean and 131 (55.98%) IUCDs were placed after vaginal delivery. Symptoms of unusual vaginal discharge were reported by 28(11.9%) women, missing thread were reported by 67(28.5%), patients, abdominal pain was reported by 92(39.2%) and heavy bleeding was reported by 44(18.8%) patients at follow-up as showed in table 2.

Table 1: Distribution of demographic characteristic (n=234)

s.no	Variable	Frequency (n)	Percentages %
1	Age		
	<30 years	108	46.15
	≥30 years	126	53.84
2	Gestation		
	<36 weeks	112	47.86
	≥36 weeks	122	52.13
3	Parity		
	0-2	63	26.92
	>2	171	73.07
4	Residence		
	Urban	120	51.28
	Rural	114	48.71
5	Education		
	Illiterate	76	32.47
	Middle	118	50.42
	higher	40	17.09
6	Socioeconomic status		
	Lower	93	39.74
	Middle	107	45.72
	Upper	34	14.52

Table 2: Complications of PPIUCD (n=234)

Variables	N (%)
Missing thread	67(28.5%)
vaginal discharge	28(11.9%)
Abdominal pain	92(39.2%)
Heavy bleeding	44(18.8%)
Uterine perforation	00(00.0%)

Table 3: Comparison of efficacy with demographic variables (n=234)

S. No	Variables	Vaginal insertion N (%)	cesarean Section insertion N (%)	P value
1	Age			
	<30 years	32(13.84%)	28(11.92%)	0.48
	≥30 years	44(18.84%)	38(16.15%)	0.38
2	Gestation			
	<36 weeks	44(18.84%)	26(11.15%)	0.64
	≥36 weeks	32(13.84%)	40(16.15%)	0.04
2	Parity			
	0-2	19(08.07%)	17(07.30%)	0.13
	>2	57(24.61%)	49(20.71%)	0.71
3	Education			
	Illiterate	30(13.07%)	16(06.92%)	0.68
	Middle	35(15.00%)	35(15.00%)	0.83
	Higher	11(04.61%)	15(06.15%)	0.07
4	Residence			
	Urban	43(18.46%)	39(16.58%)	0.18
	Rural	33(14.23%)	27(11.53%)	0.02
5	Socioeconomic status			
	Lower	28(11.92%)	13(05.76%)	0.45
	Middle	34(14.61%)	38(16.15%)	0.02
	Upper	14(06.15%)	14(06.15%)	0.77

Comparison of efficacy of Vaginal Insertion and Intra-Cesarean Insertion of Post-Partum Intrauterine Contraceptive Device was Showed in figure 1, efficacy of vaginal insertion was 79(60.30%) and intra-cesarean insertion of PPIUCD was 65(63.10%) with p-value 0.458 .

Although comparison showed in significant result but it was showing that IUD insertion post cesarean section have higher efficacy as compared to vaginal insertion of IUD.

In table 3 stratification for efficacy had done with respect to age, parity, residential status, educational and socio economic status, P-values were significant with p-value<0.05.

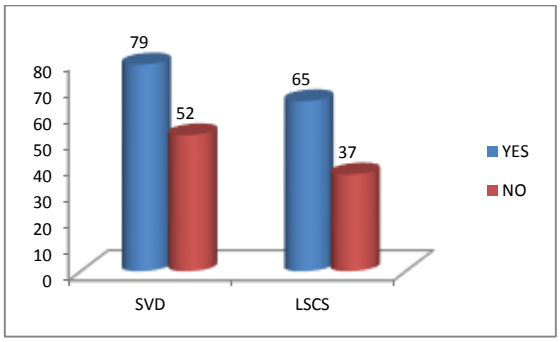

Figure 1: Distribution and comparison of efficacy with mode of delivery P-value=0.458

DISCUSSION

Postpartum period is a golden time to avail contraception in developing country with high level of acceptance as women in postpartum period are highly motivated to use contraception .Women undergoing caesarean section seem to have greater probability of accepting postpartum IUCD possibly due to post caesarean conception fear. Further, the number of women following up after intracaesarean insertions was also higher than post placental vaginal insertions, although this difference was not statistically significant. It appears that women undergoing caesarean delivery are more compliant with follow-up visits probably for fear of complications.

In the present study, a lesser number of spontaneous IUCD expulsions were observed as compared to other studies. Çelen et al. reported 1-year cumulative expulsion rates of 12.6% and 17.6% in two different studies of PPIUCD insertions [11]. In a recent study by Kittur and Kabadi, using similar technique and timing (within 10 minutes of placental delivery) of PPIUCD (CuT-380 A), as in our study, and also trained providers resulted in similar fewer expulsions (5.23%) as in the present study.[12] Timing of IUCD insertion is an important determinant of expulsions. UN-POPIN report stated that 6-month cumulative expulsion rate was 9% for immediate post placental insertions (within 10 minutes) compared with 37% for insertions between 24 and 48 hours after delivery.[13]

The symptom of irregular vaginal bleeding was not influenced by route of insertion. The women mainly complained of excessive bleeding and were treated adequately with Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) and hematinic. Shukla et al. indicated a higher incidence of menorrhagia (27.2%) with use of CuT 200 in postpartum women .[14] Gupta et al. observed bleeding in 4.3% PPIUCD cases using CuT-380-A [15]. Other studies using CuT-380 A have reported IUCD removal due to bleeding/pain as 6% to 8%.[11,12]

A recent study showed that family planning provided immediately after childbirth without a need for repeated visiting of the health-care system and are very convenient for women who will be unable to return for contraception purposes. [14]

Amongst the women studied at follow-up, there was no case of uterine perforation. None of the studies, as per

literature search, have reported uterine perforation after PPIUCD insertion.

In women reporting symptoms of unusual vaginal discharge, actual infection was present in only 1.75% cases on clinical examination. It is known that some women report increased vaginal discharge with the IUCD, which is usually normal leucorrhoea and not a sign of infection.[15] Women delivering by caesarean section seem to be more apprehensive regarding symptoms of discharge, having undergone a surgical procedure. A multicenter follow-up study from India reported an overall infection rate of 4.5% among PPIUCD insertions .[16] Welkovic et al. compared infection rates among women with post placental IUD and women without IUD and found no difference. [15]Some studies have found no incidence of infection after PPIUCD insertion .[11,17]

The expulsions were significantly higher in post placental IUCD insertions after vaginal deliveries as compared to caesarean insertions. This difference was also observed in a recent systematic review of PPIUCD insertions. [18]Gupta et al. also reported lower expulsions after intracaesarean insertions. [17]Letti Müller et al. studied expulsion rates of immediate post placental CuT-380 A insertion by transvaginal sonography and found statistically significant higher expulsions in vaginal insertions than caesarean insertions .[19]

In the present study, even if we combine the discontinuations (removal of IUCD for different medical or personal reasons) and spontaneous expulsions we still have a commendable IUCD continuation rate of 90.6%. In the absence of IPPIUCD insertions, these women would have left the hospital premises without effective postpartum contraception. Similar rates of removal of PPIUCD have been reported in recent studies, ranging 3–8% .[12,16]

One of the main observations at follow-up was that of undescended IUCD strings. The practice of leaving the full length of IUCD string in uterine cavity during caesarean section and not passing it through the cervix, unlike study by Çelen et al., may have had a role in the significant difference in the incidence of undescended strings in intracaesarean insertions. Our technique might also be the reason for lower expulsion rates as compared to study by Çelen et al. (5.3%) for intracaesarean IUCD insertions at 6 weeks of follow-up .[11] Counselling the women and confirmation of IUCD in uterine cavity by ultrasound are important to reassure the women and encourage them to continue with the device. In Pakistan The National Committee for Maternal & Neonatal Health (NCMNH), is promoting awareness and providing postpartum IUCD insertion in tertiary care hospital .This study was conducted for short duration ,so this limit accurate assessment of expulsion rate as well as continuation of contraception.

CONCLUSION

PPIUCD in the field of postpartum family planning is a promising approach. Inserting IUD post-partum is safe leading to the expanding of the usage of IUCD meeting the unmet needs. Continuation rate in intra-cesarean insertion was higher compared to vaginal insertion.

PPIUCD is a strong weapon in the family planning armory and should be encouraged after deliveries. Early follow-up should be encouraged to detect expulsions and tackle common problems.

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