ORIGINAL ARTICLE

Outcomes of Immediate Postpartum Intra-Uterine Contraceptive Device (PPIUCD) Insertion in a Military Based Hospital

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ABSTRACT

Aim: To determine the outcomes of post-partum IUCD (PPIUCD) in early post-partum period in females delivering by cesarean section or vaginally.

Methods: We conducted this quasi-experimental study in PAF Base Faisal hospital Karachi within a duration of 14 months from April-2017 to June-2018. A total of 500 females of PPIUCD insertion after either vaginal or C-section delivery were selected for this study. We used CuT-180 IUCD device in all cases. In females having vaginal delivery, IUCD was placed in the uterine fundus using Kelly's Placental Forceps after ten minutes of placenta removal. In C-section patients, IUCD was placed directly in the uterine fundus.

Results: Mean age of studied females was 28.47±8.51 years. PPIUCD was inserted in 345(69%) females having simple vaginal delivery (SVD) and 155(31%) having C-section. Regarding outcomes, IUCD expulsion was noted in 29(5.8%) females, 21(6.08%) in SVD and 8(5.16%) in C-section patients (p-value 0.68). Malposition of device occurred in 5(1%) females, 3(0.86%) in SVD and 2(1.29%) in C-section (0.66). Vaginal discharge was reported by 81(16.2%) females, 54(15.65%) in SVD vs 27(17.41%) in C-section patients. Menstrual problems were reported by 89(17.8%) females, 58(16.8%) of SVD and 31(23.22%) of C-section females (p-value 0.38). Removal of IUCD was done in 37(7.4%) cases, 28(8.1%) in SVD patients and in 9(5.8%) cases in whom IUCD was inserted after C-section (p-value 0.36).

Conclusion: PPIUCD is an effective and safe technique of contraception. It has minimal complications rate. Government should emphasis on counseling of families regarding IUCD in early post-partum period to increase awareness regarding its beneficial effects.

Keywords: Post-partum IUCD, contraception

INTRODUCTION

Birth space of 36 months can reduce 10% incidence of newborn and 36% incidence of maternal deaths[1]. Preventive measures to pregnancy are often delayed in immediate post-partum period. Many of the females do not demand next pregnancy in immediate period but they are unaware of the contraceptive methods so result is unwanted pregnancy. About 86% of total pregnancy in early post-partum period are due to due non-use of contraceptives and about 88% of them end in induced abortion[2].

Pakistan is the 6th most populous country and has a growth rate of 2.1%[3]. A demographic survey including 57 countries reported that 62% women did not do family planning in first post-partum year[4]. Pakistan demographic health survey (PDHS) have reported 35% prevalence of contraceptive usage among married couples; 26% using modern methods of contraception[5]. In Pakistan, unwanted pregnancies account for 38% to 46% total pregnancies[6].

WHO has recommended to use intrauterine contraceptive device (IUCD) in immediate post-partum period as a safe and effective method to prevent un-wanted pregnancy.[7]Women are highly excited in early post-partum period and adopting a proper effective contraception can reduce the risk of un-wanted pregnancy and helps to keep a proper inter-pregnancy interval[8,9]. Because waiting for 6 weeks for contraception after pregnancy can result in un-wanted pregnancy[10].

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So insertion of IUCD in immediate post-partum period is an ideal time because most of women are from remote areas and they often come for follow-up and these only visit antenatal care during labor. Many of the women who comes to antenatal care after 6 weeks for contraception they did not know that they have become pregnant before that.[10]So insertion of IUCD in immediate post-partum period is more effective because use of hormonal contraceptives is not suitable in this period[11]. Use of IUCD is cost-effective and did not require repeated visits.

In present study we determined the outcomes of post-partum IUCD (PPIUCD) in early post-partum period in females delivering by cesarean section or vaginally.

METHODS

We conducted this quasi-experimental study in PAF BaseFaisalHospital Karachi within a duration of 14 months from April-2017 to June-2018. A total of 500 females of PPIUCD insertion after either vaginal or C-section delivery were selected for this study. Patients were informed about potential benefits of PPIUCD insertion during their antenatal visits or before delivery in the labor room. Hospital approval for ethical clearance was taken. All included females were informed about study objective and written informed consent was taken from them. Patients who were anemic at the time of delivery, having post-partum hemorrhage, co-agulation disorders, fever after delivery, and patients lost in follow-up period were excluded.

We used CuT-180 IUCD device in all cases. In females having vaginal delivery, IUCD was placed in the uterine fundus using Kelly's Placental Forceps after ten minutes of placenta removal. In C-section patients, IUCD

was placed directly in the uterine fundus. Before discharge patients were informed about possible risk of IUCD insertion and were guided to come for follow-up at 1.5 months and 06 months. At follow-up patients were asked for irregular bleeding, any abnormal vaginal discharge, and signs of expulsion of device. At follow-up pelvic examination was done to determine position of IUCD, bleeding and infection. Ultrasound was performed to confirm the expulsion of IUCD. In case of expulsion or other abnormalities patients were counselled regarding IUCD removal and IUCD removal was done. Incidence of expulsion or mal-position of IUCD, loss of string, Menstrual disturbances, and abnormal Vaginal discharge were primary study outcomes. Data analysis was performed using SPSS v23. Complication of PPIUCD in females having vaginal and C-section delivery were compared using chi-square/Fisher's exact test. P-value $\leq$ 0.05 was considered as significant difference.

RESULTS

Mean age of studied females was 28.47$\pm$8.51 years, 285(57%) females were of age <30 years and 215(43%) were of age $\geq$ 30 years. Most of females 368 (73.6%) were belonging to middle class, 120(24%) lower middle and only 12(2.4%) upper class. There were 163 (32.4%) patients who had used contraceptive methods before and remaining 337 (67.4%) were not using contraceptives. Out of 500 females in whom PPIUCD was inserted, 345 (69%) were of simple vaginal delivery (SVD) and 155(31%) were of C-section (Table 1).

Regarding outcomes, IUCD expulsion was noted in 29(5.8%) females, 21(6.08%) in SVD and 8(5.16%) in C-section patients (p-value 0.68). Malposition of device occurred in 5(1%) females, 3(0.86%) in SVD and 2(1.29%) in C-section (0.66). Vaginal discharge was reported by 81(16.2%) females, 54(15.65%) in SVD versus 27(17.41%) in C-section patients. Menstrual problems were reported by 89(17.8%) females, 58(16.8%) of SVD and 31(23.22%) of C-section females (p-value 0.38). Removal of IUCD was done in 37(7.4%) cases, 28(8.1%) in SVD patients and in 9(5.8%) cases in whom IUCD was inserted after C-section (p-value 0.36) [Table 2].

Table 1: Baseline Study Variables.

Variable	Value
Mean Age (Years)	28.47$\pm$8.51
Age Groups	
< 30 years	285 (57%)
$\geq$ 30 years	215 (43%)
Socioeconomic Status	
Upper Class	12 (2.4%)
Middle Class	368 (73.6%)
Lower Middle Class	120 (24.0%)
Previous use of Contraceptives	
Yes	163 (32.4%)
No	337 (67.4%)
Mode of Delivery	
Simple Vaginal Delivery	345 (69.0%)
C-section	155 (21.0%)

Table 2: Outcomes of PPIUCD.

Outcomes	Total (n=500)	SVD (n=345)	C-section (n=155)	P-value
IUCD Expulsion	29 (5.8%)	21 (6.08%)	8 (5.16%)	0.68
Mal-position of IUCD	05 (1.0%)	3 (0.86%)	2 (1.29%)	0.66
Vaginal Discharge	81 (16.2%)	54 (15.65%)	27 (17.41%)	0.62
Menstrual Problems	89 (17.8%)	58 (16.8%)	31 (23.22%)	0.38
Infection	04 (0.8%)	02 (0.57%)	02 (1.29%)	0.40
Removal of IUCD due to complications	37 (7.4%)	28 (8.1%)	09 (5.8%)	0.36

DISCUSSION

Insertion of PPIUCD is a very feasible way of contraception because a female can be easily motivated during this time. Plan to insert IUCD in follow-up period is very difficult especially in females of developing countries because many of the females do not come for follow-up and to motivate about IUCD insertion also becomes difficult in this period[12-14]. In present study we evaluated the results of immediate PPIUCD insertion and we found very promising outcomes of PPIUCD.

In our study, 57% female patients in whom PPIUCD was inserted were of age <30 years. A study by Singhal et al. reported PPIUCD insertion in 52.8% of females having age <30 years[15].

In present study, 06 months'continuation rate of IUCD was 92.6%, with comparable success rate in SVD and C-section group (8.1% versus 5.8% respectively). A study by Afshan et al. reported 06 months' continuation PPIUCD rate of 90.0% females.[16]Hooda et al. reported continuation rate of 95.9%. Kittur et al. reported device continuation in 86.19% patients at 06 months' follow-up.[17] Zhou et al. reported 06 months' device continuation in 86% patients[18].

There were 73.6% patients belonging to middle class in our study and only 24.0% females were from lower middle class. But other studies reported higher number of poor females in studies conducted in poor countries. Like Wasim et al. reported 88.4% poor patients and only 12.6% patients of mille class in their study.[19] This difference is because we conducted study in an army hospital where all army persons are treated, this is the main reason of difference in socio-economic status in present and other studies.

In present study, menstrual abnormality was the commonest complication of IUCD diagnosed in 17.8% patients, while abnormal vaginal discharge occurred in 16.2% patients, and IUCD expulsion in 5.8% patients.

Wasim et al. reported menstrual abnormality in 19% females after PPIUCD, abnormal vaginal discharge in 15.4% females, and expulsions in 6% females.[19]Afshan et al. reported expulsion in 5.0% females and infections in 0.9% females at 02 months follow-up[16]. Celen et al. reported IUCD expulsion in 12.6% females and in another study, the same authors reported expulsion in 17.6%

patients at follow-up of 1 year[20,21]. POPIN reported that timing of IUCD insertion independently effects expulsion of IUCD, with lower rates if IUCD is inserted at 10 minutes of SVD or c-section and is higher if inserted at 24 to 48 hours after delivery. In this study, we inserted IUCD in all patients after 10 minutes of device insertion.

A recent meta-analysis emphasized on the necessity to council females during ante-natal visits to increase the post-partum up-take rate of IUCD[22]. So patients should be counselled during ante-natal visits or before delivery about benefits of IUCD insertion for preventing unwanted pregnancy in all gynecology centers in Pakistan. This will reduce the incidence of abortions and will have positive impact on maternal and neonatal health by preventing early pregnancy.

CONCLUSION

PPIUCD is an effective and safe technique of contraception. It has minimal complications rate. Government should emphasis on counseling of families regarding IUCD in early post-partum period to increase awareness regarding its beneficial effects.

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