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Research Article

**A DESCRIPTIVE CASE SERIES TO ASSESS THE
FREQUENCY OF COMPLICATION AMONG PREGNANT
WOMEN UNDERGOING IUCD INSERTION AFTER POST
PARTUM****Waqar Butt, Kaleem Ifthar, Muhammad Ibtissam Akram**
Services Institute of Medical Sciences Lahore**Abstract:**

Background: Policies are being formed to control the increasing rate of population. This is possibly planned through various long-term and effective contraceptive methods. In order to achieve the goal of population control, PPIUCD insertion is first strategy to control the population.

Objectives: We aimed to assess the PPIUCD insertion associated frequency of complications in the pregnant women who were possibly going to experience C-Section in their six-month routine follow-up.

Material and Methods: This was a descriptive case series study conducted on 200 cases at Allied Hospital, Faisalabad from February to November 2017. We took a detailed information about the history of the patients through counselling sessions for an IUCD insertion after an immediate postpartum. Insertion of IUCD was made in the course of the intra-caesarean section. We also observed IUCD displacement, pelvic infection and expulsion as associated complications in the follow-up of six months. Researcher himself completed all the procedures of IUCD insertion and Caesarian Section.

Results: Our research included a total of two hundred pregnant cases with a mean age factor as (26.87 ± 4.13) years; whereas, the gestational age was (38.51 ± 0.99) weeks. Ninety-one females (45.5%) passed through first onset of CS; whereas, twenty-seven females (13.5%) in the third onset of CS. PPIUCD expulsion was reported in 178 females (98.9%); whereas, 21 persistent cases (11%). IUCD displacement was present in 53 patients (28.5%); whereas, IUCD displacement was absent among 147 patients (73.5%). Pelvic Infection was reported among 98 patients (49%); whereas, it was not reported among 102 patients (51%).

Conclusion: Researcher concluded that a high expulsion rate was reported after 6 months of PPIUCD insertion in the women who experienced Cesarean Section (CS).

Keyword: PP IUCD, Cesarean section (CS) and Contraceptive Device.

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INTRODUCTION:

Surgical interventions, mortality and morbidity are associated with the onset of the short inter-conception period when females underwent CS [1]. The long-term requirement of effective and safe contraception can be met through IUCD as it is not affecting the act of breastfeeding [2]. Five to ten-year protection is possible through modern IUCD as it is safe, inexpensive and effective to counter unplanned pregnancy [3]. Pakistan reports very less use of IUCD as a contraceptive because only thirty percent have used this method; moreover, it also cost-effective contraceptive as it utilizes (Copper T 380A) [3, 4]. According to the criteria of WHO, the insertion of IUCD is made within forty-eight hours of the postpartum, it can also be inserted after four months of birth [5].

Various studies also report the effectiveness and safety of IUCD as it reduces morbidity and infections [6 – 8]. It is inserted visually which reduces the operative fear and increased the confidence of obstetrician. However, even in the presence of various effectiveness and safety parameters obstetricians fell hesitant about the positive aspects of Copper T 380A [6]. IUCD insertion during CS also reduces hospital visit and other expenditures. An author has also reported Post placental (Copper T 380A) clinical outcomes after the insertion of IUCD among 300 women undergoing CS with a mean age of (23.12 ± 2.42) years [9]. The hospital stay was not more than four days among (94.33%) cases. Various outcomes such as expulsion, IUCD displacement, pelvic infection and continuation were respectively reported as 87.5%, 20.07 %, 46.36% and 96.33%.

It is important to note that an immediate IUCD insertion after postpartum is an effective and safe contraception option. Pakistan is among most populated countries and it is graded sixth among other countries (Pakistan Economic Survey 2013 – 14) with a growth rate of 1.95% [10]. This growth in population is attributed to higher fertility rates among the Pakistani population. Therefore, the researcher planned this research on IUCD (Cu-T 380) in terms of its effectiveness and safety features [11, 12]. The researcher also aimed at an exact statistical value for the associated complications in comparison to the other national and international studies [12].

MATERIAL AND METHODS:

This was a descriptive case series study conducted on 200 cases at Allied Hospital, Faisalabad from February to November 2017. Sample selection was made through non-probability consecutive sampling. Sample size of 200 cases is calculated with 95% confidence level 6% margin of error and taking expected percentage of displacement i.e. 20.07%

(least among all) complications following PPIUCD insertion among women undergoing C-section after 6 months follow up

Inclusion Criteria:

1. All females undergoing caesarean section and counselled for Copper T Insertion (Cu-T)
2. Age between 18-35
3. Gestational Age 37-40 weeks assessed by Last Menstrual Period
4. No Pelvic infection assessed clinically i.e. no history of fever, abdominal pain and pelvic discharge
5. $Hb \geq 10$ mg/dl
6. No history of Hypertension and Diabetes Mellitus assessed by Fasting Blood Sugar Level (< 110 mg%) and HBA1C < 6.5 mmol

Exclusion Criteria:

1. Previous Ectopic Pregnancy
2. Allergy to Copper
3. Chorioamnionitis assessed by prolonged rupture of membranes > 18 hours, fever more than 99F, tachycardia: heart rate greater than 120beats/ min and lower abdominal tenderness
4. History of Gynecological Malignancy

Data Collection Procedure: After taking ethical clearance from the hospital ethical committee, the study was conducted at Allied Hospital, Faisalabad. Informed consent was taken from all patients. Personal profile of the patient (including name, age, sex, patient registration no. & address) was noted. A detailed history was taken followed by counselling for immediate postpartum IUCD insertion. IUCD was inserted during intra caesarean section. The complications which would be expulsion, pelvic infection and displacement following PPIUCD insertion among the acceptors by 6 months follow up was observed. All cases of Caesarian Section and IUCD insertion was done by the researcher herself.

Data Analysis Procedure: The data was entered and analyzed by SPSS. Numeric data like age and gestational age were presented as mean and S.D whereas Qualitative data like expulsion, pelvic infection and displacement was presented in frequency and percentages. Data was stratified for a number of caesarian sections, age, gestational age to address the effect modifiers. Post Stratification Chi-Square Test was applied with P value ≤ 0.05 as significant.

RESULTS:

There was a total of 200 women who were enrolled in this study with a mean age of 26.87 ± 4.13 years. Gestational age at the time of enrollment was 38.51 ± 0.99 weeks. Majority of the female were passed through one cesarean section 91(45.5%) and lesser were passed through three cesarean section 27(13.5%).

Expulsion of PPIUCD was noted in 178(89%) of cases and persistent in 22(11%) of cases. Displacement of IUCD was found to be present in 53(28.5%) of cases and did not note in 147(73.5%) of cases. 98(49%) were presented with pelvic infection and 102(51%) were infection free. When results were

stratified for age, gestational age, and a number of cesarean sections it was noted that there was a significant difference in pelvic infection in females who had a history of two cesarean section. All other confounder was done significantly different for the outcome as mentioned in table 6, 7, and 8.

Table – I: Distribution according to Gestational Age

Number	200
Mean	38.51
SD	0.99743

Table – II: Distribution according to Number of Cesarean Section, Expulsion, IUCD Displacement and Pelvic Infection

Stratification		Number	Percentage
Expulsion	Yes	178	89.00
	No	22	11.00
IUCD Displacement	Yes	53	28.50
	No	147	73.50
C-Section	One	91	45.50
	Two	82	41.00
	Three	27	13.50
Pelvic Infection	Yes	98	49.00
	No	102	51.00

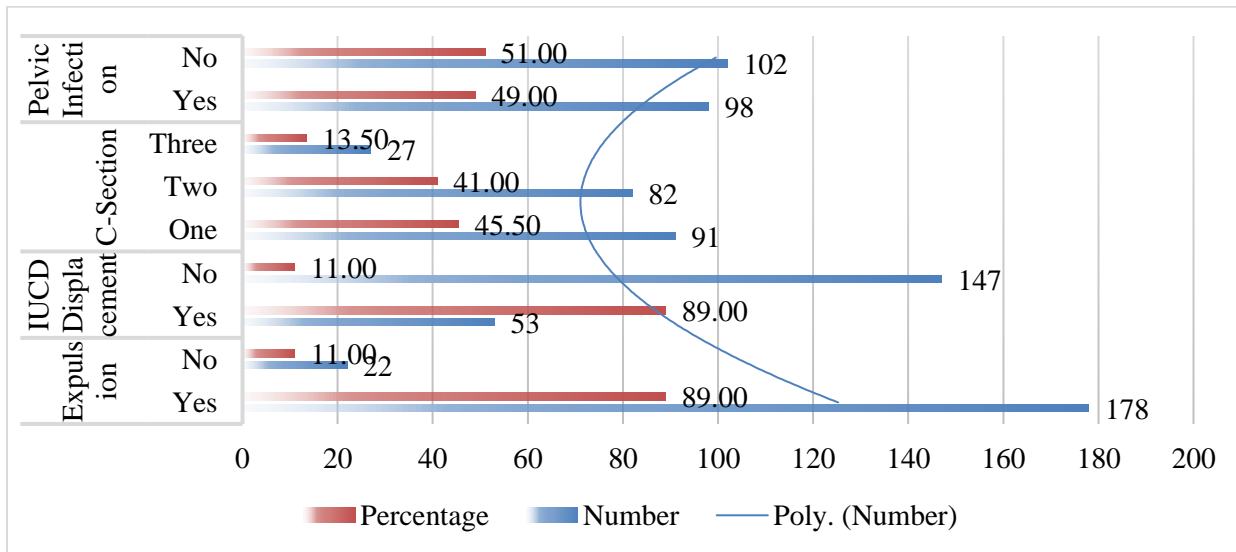
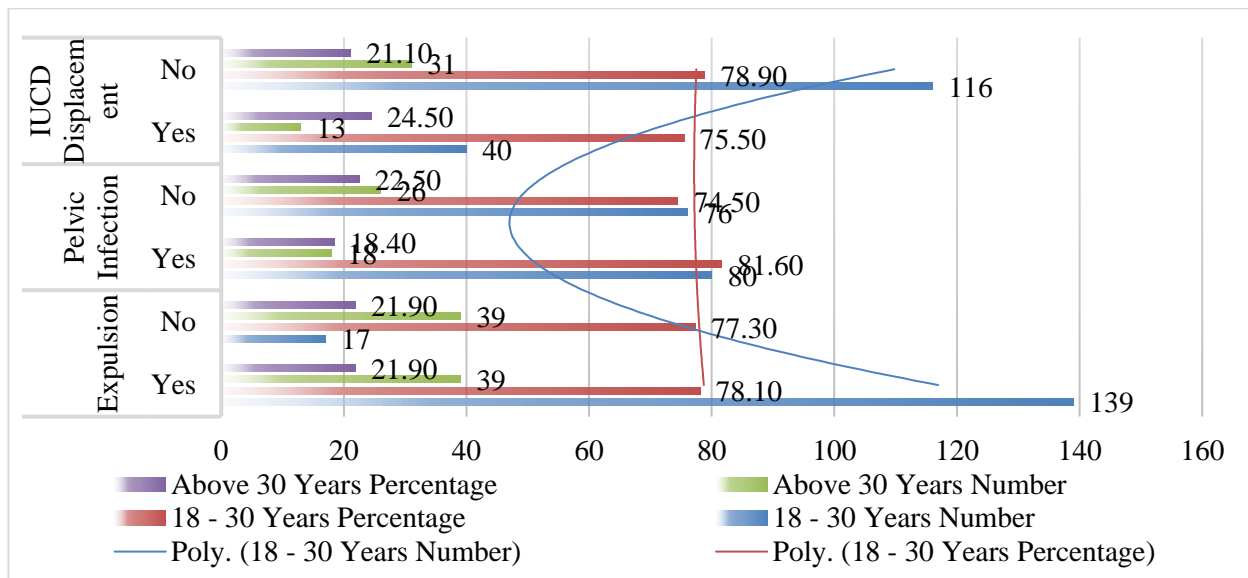


Table – III: Age Distribution

Age Stratification		18 - 30 Years		Above 30 Years		P-Value
		Number	Percentage	Number	Percentage	
Expulsion	Yes	139	78.10	39	21.90	1
	No	17	77.30	39	21.90	
Pelvic Infection	Yes	80	81.60	18	18.40	0.23
	No	76	74.50	26	22.50	
IUCD Displacement	Yes	40	75.50	13	24.50	0.6
	No	116	78.90	31	21.10	

**Table – IV: Gestational Age Stratification**

Gestational Age Stratification		37 - 38 Years		Above 38 Years		P-Value
		Number	Percentage	Number	Percentage	
Expulsion	Yes	86	48.30	92	51.70	0.65
	No	12	54.50	10	45.50	
Pelvic Infection	Yes	47	48.00	51	52.00	0.77
	No	51	50.00	51	50.00	
IUCD Displacement	Yes	30	56.60	23	43.40	0.2
	No	68	46.30	79	53.70	

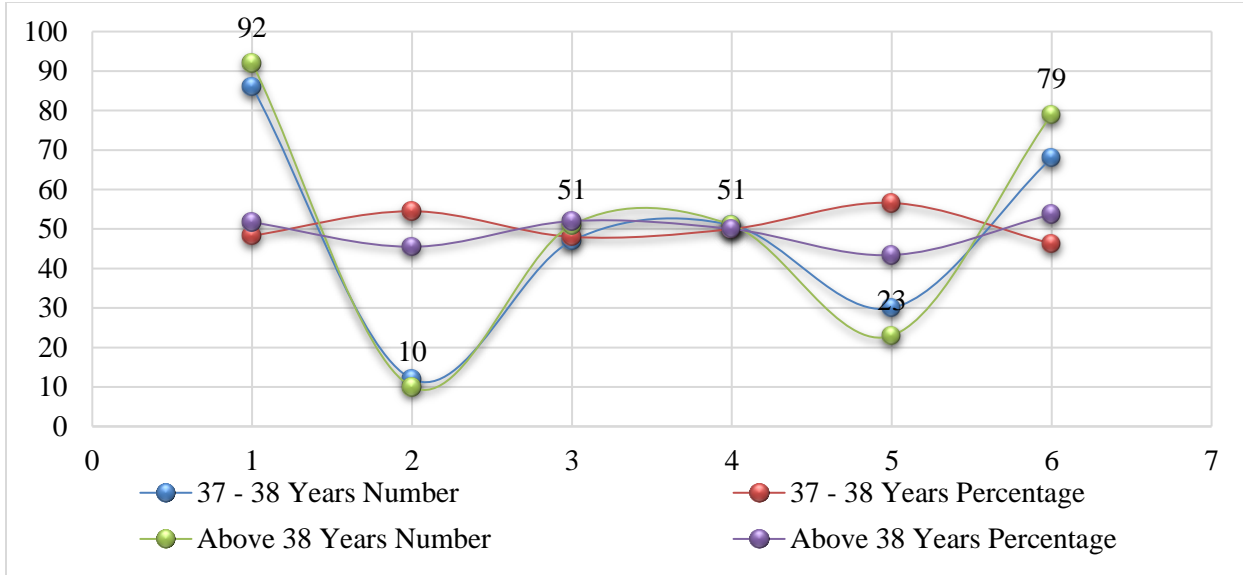
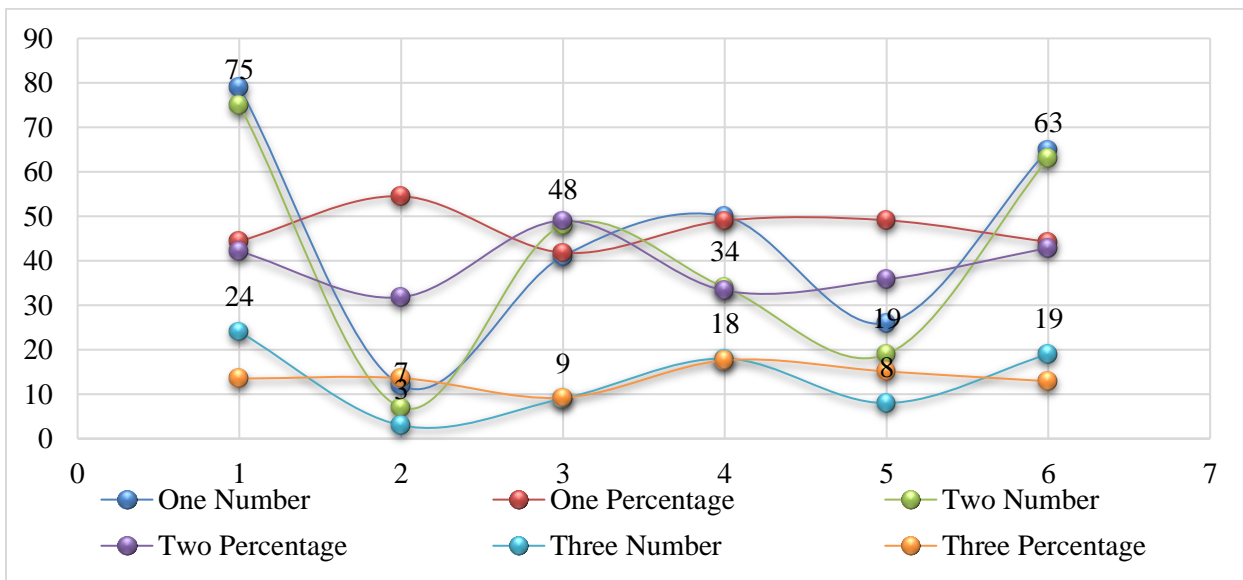


Table – V: Caesarean Section Stratification

C-Section		Expulsion		Pelvic Infection		IUCD Displacement	
		Yes	No	Yes	No	Yes	No
One	Number	79	12	41	50	26	65
	Percentage	44.40	54.50	41.80	49.00	49.10	44.20
Two	Number	75	7	48	34	19	63
	Percentage	42.10	31.80	49.00	33.30	35.80	42.90
Three	Number	24	3	9	18	8	19
	Percentage	13.50	13.60	9.20	17.60	15.10	12.90
P-Value		0.62		0.04		0.69	



DISCUSSION:

Fertility decline is the prime purpose of any family planning program besides preserving mother and child health which is of utmost importance for any country to keep health indicators in line with the targets of the Millennium Development Goals. This could only happen when long term contraceptives are promoted and made available to all eligible women looking for long term spacing, through quality family planning services, dedicated work force and state of the art service outlets. (107) Temporary contraceptive methods including condoms are very popular in many developing countries. A condom has a high failure rate (20% with typical use); therefore, it can result in an unwanted or untimely pregnancy. A number of such pregnancies result into multi parity or an unsafe termination of pregnancies and therefore, high maternal morbidity and mortality rates. This may be associated with low use of modern long-term contraceptives which provide protection for 4–5 years. The modern Intrauterine contraceptive device (IUCD) is very effective (99%) and an inexpensive family planning method. (108)

Pakistan's population is crossing 180 million whereby the contraceptive prevalence rate (CPR) has been stagnant (around 30%) in Pakistan for more than a decade now. People mostly rely on short term and temporary methods, of which condoms are the most popular one, but with high failure rate because of its incorrect use. Therefore, the number of children per woman in Pakistan is still above 4 with a high (25%) unmet needed for contraceptives. (109)

The women mainly complained of excessive bleeding and were treated adequately with No steroidal 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. (110) Gupta *et al.* observed bleeding in 4.3% PPIUCD cases using CuT-380-A. (111) Other studies using CuT-380 A have reported IUCD removal due to bleeding/pain as 6% to 8%. Difference in types of IUCD could possibly explain the different rates of bleeding problems. (112)

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. (113) In a recent study by Kittur and Khabadi, 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%). 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. (114)

Mishra S *et al.*, found expulsion rate 6.4% at 6 weeks. A 23.05% participants were lost follow up [7]. Gunjan Goswami *et al.*, found expulsion rate was 10% and 30% lost follow up. In their study bleeding/discharge (30%), abdominal pain (20%), family pressure (20%), just did not want to continue (5%) were the reasons they found for removal of IUCD in the follow up. (115) 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. (113) Gupta *et al.* also reported lower expulsions after intra-caesarean insertions. (114) Letti Müller *et al.* studied expulsion rates of immediate post placental CuT-380 an insertion by transvaginal sonography and found statistically significant higher expulsions in vaginal insertions than caesarean insertions.

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 PPIUCD 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% [100, 23].

Anjali *et al.*, observed 28% lost follow up. Majority (22%) were expelled, 8% had pain abdomen and 6% found menstrual irregularities [4]. Vidya Ramana *et al.*, observed high follow up (93%). Very minimal percentage expelled and went for removal due to complications like pain and discharge. (116)

Satyavathi *et al.*, found reasons for removal were bleeding (27.27%), menstrual disturbances (18.18%), pressure from family (27.27%) other problems (18.18%) and pain (9%). Majority studies including current study observed pain and discharge were the main problems for removal of IUCD. (117)

In a local study, total of 3,250 clients were counseled for IUCD insertion, 2,490 clients were counseled for insertion of PPIUCD and 760 clients were counseled for Interval IUCD. Acceptance rate was less in PPIUCD insertion (36.1% v/s 60.5%) but actual insertion was more in PPIUCD insertion (58.8% v/s

32.6%) and the difference was significant. Most common reason for acceptance by clients in both groups was long term use. The reason for refusal in both groups was mainly fear of side effects. (118)
Strategies to improve current scenario: Government needs to develop strategies to increase public awareness of the PPIUCD through different media sources. It is also important to arrange for training on PPIUCD in order to increase knowledge and skills among healthcare providers. This will also further promote PPIUCD use and aid in reduction of the expulsion rates.

CONCLUSION

Insertion of IUCD in the immediate postpartum period is an effective, safe, and convenient contraceptive intervention in both cesarean and vaginal deliveries. Although there is a relatively higher incidence of expulsions after vaginal PPIUCD insertions, as compared to cesarean section. They should be encouraged considering the advantages that come along. PPIUCD insertions by trained clinicians, principles of fundal placement using long placental forceps, and timing of insertion are helpful in reducing complications and expulsions.

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