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An overview of immediate post -partum intrauterine contraceptive device application: a prospective study

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ABSTRACT: Aims/ objective: The aim of this prospective study is to assess the acceptability, efficacy, feasibility of immediate postpartum intrauterine device insertion and it's rates of expulsion, and complications

Material and methods: This was a single center prospective interventional analytical study conducted at Maharani Laxmibai Medical College and Hospital, Jhansi, India from January 2016 to October 2019. One thousand nine hundred and forty one cases were taken for study. The Chi-square test was used to measure the strength of associations between variables, a P-value of <0.05 was considered to be statistically significant.

Results: A total number of 1941 women were eligible for post partum intrauterine contraceptive device insertion out of which 423 (21.77%) women were accepted PPIUCD insertion while 1518 (78.23%) women, i.e. almost three quarters of them declined insertion. Fifty two patients developed bleeding problems and missed thread was observed in 35 patients. There was no parturient who had uterine perforation. One hundred seventy patients were satisfied and had no complaints.

Conclusion: The acceptance of PPIUCD was high but its awareness in women is very poor in a highly populated country like India. Acceptance was higher in women of caesarean section than normal delivery and those who have less than 2 child and primipara.

Key words: Post- partum; contraceptive; intrauterine device

I. INTRODUCTION

India is the second most populated country in the world and approximately 241 women dying in childbirth for every 100,000 births[1]. India has one of the highest numbers of maternal deaths in the world. Most of them are preventable. Indian women have more children than desired and often too closely together due to limited choices of quality family planning (FP) services. Improved access to FP can have a positive impact on population growth, maternal mortality, and infant and newborn outcomes.

There is huge Scopes and opportunities for PPFP (post partum family planning)/ Post post partum intrauterine contraceptive device (PPIUCD) services in India because of huge unmet needs: 65% women in 1st year of postpartum period have unmet need for FP, but only 26% are using any contraceptive. [2]

The postpartum period presents an excellent window of opportunity to provide family planning counselling and methods to women who may not otherwise received family planning services. Many family planning methods can be used immediately following childbirth and will help prevent subsequent mistimed or unwanted pregnancies.[3]

In India PPIUCD Program was started in 2009. Ideally, choices of methods should be discussed during routine prenatal visits, allowing women to choose the most appropriate method at that point.

In India Current method of family planning are[4] (i) Female Sterilization 34% (ii) Male Sterilization 1% (iii) Pill 4% (iv) IUD 2% (v) Condom 6% (vi) Any Traditional method 7% (vii) Non user 46%

The modern IUCD is a highly effective, safe, private, long-acting, coitus independent and

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rapidly reversible and cost effective method of contraception with few side effects and require little action once placed. There are three categories of modern IUCDs: Copper IUCDs, Progestin-releasing IUCDs and non-medicated (inert) IUCDs. The CuT380A contains a T-shaped polyethylene frame with 380 A^0 (Angstrom units) of exposed surface consisting of fine copper wire wound around a vertical stem and copper collars on each of the horizontal arms. There is a 3 mm ball at the base of the stem to decrease the risk of cervical perforation. A white or clear polyethylene monofilament string is knotted through this ball. The frame contains barium sulfate to make it radiopaque.[5] The device is latex-free and clinically relevant allergy to copper is extremely rare.[6]

The CuT380A is approved to remain in place for 10 years, but is effective for at least 12 years. With perfect use the probability of pregnancy in the first year is 0.6 percent; with typical use, the first-year pregnancy rate is 0.5 to 0.8%.[7]

Insertion of an intrauterine contraceptive device (IUCD) immediately after delivery is appealing for several reasons. The woman is known not to be pregnant, her motivation for contraception may be high, and the setting may be convenient for both the woman and her provider. However, the risk of spontaneous expulsion may be unacceptably high

Ideally, postpartum insertion should take place within 10 minutes of placental delivery (immediate postplacental) or at about six weeks after birth, when a woman returns for a routine postpartum care visit.

The aim of this prospective study is to assess the acceptability, efficacy, feasibility of immediate postpartum intrauterine device insertion and its rates of expulsion, and complications

II. MATERIALS AND METHODS

Study design

This was a single centre prospective interventional analytical study conducted at Maharani Laxmibai Medical College and Hospital, Jhansi from January 2016 to October 2019. One thousand nine hundred and forty-one pregnant female who came for delivery included in the study. The protocol was approved by institution's ethics committee. According to the principles of the declaration of Helsinki 1975, informed consent was obtained from all the patients.

Patients

Patients were selected from those attending out-patient department/ antenatal clinic, labour ward and postnatal ward. The age of patient ranged from 18 years to 42 years. Inclusion criteria was based on WHO criteria and only category I patients were included in the study. The category I patients includes : postpartum less than 48 hours, age >20 years, parity one or more, Irregular menstrual bleeding (menorrhagia) without heavy menstrual bleeding, History of ectopic pregnancy, cardiovascular disease, hypertension or history of hypertension, thromboembolic disease (pastor current), hyperlipidemia, uncomplicated valvular heart disease, Headache (any type), epilepsy, depression, benign ovarian tumors, cervical intraepithelial neoplasia , thyroid , liver , gall bladder disease or diabetes, non pelvic tuberculosis, history of pelvic inflammatory disease, previous pelvic surgery including cesarean section. WHO category II, III, IV patients were excluded from the study.

METHODS

Policy for IUCD insertion

Device: The PPIUCD- CuT 380 was inserted in all the eligible candidates.

Counselling

Schedule/Time

The counselling was done by two authors separately as follows. During these sessions, postpartum contraception with IUCD was offered together with other options that include DMPA and mini pills suitable for breast feeding mothers. The merits of each method, their common side effects and possible complications were explained to all the women. Each eligible woman was then counselled individually, during which PPIUCD was introduced. This approach was used to enable the woman to make a voluntary, informed and well-considered choice. The ultimate choice was respected. In all cases reasons for acceptance and refusals were recorded.

Counselling was done for all parturient in OPD, labour room, O.T. and in antenatal ward and post natal ward as per cafeteria approach. The patients who were counselled during antenatal period, their choice about Post partum family planning was noted clearly on her antenatal card or record. This stamp or specific notation in ANC record was alert delivery room staff to women who had chosen the PPIUCD, so that preparation was made to provide the method immediately following delivery of placenta as per MEC guidelines. During early labour, counselling was done when she was

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relatively comfortable with infrequent contraction and she was not counselled during active phase. Depending on their comfort level, patients were also counselled on the first day of postpartum period. In patients where caesarean section was indicated, counselling was done prior to schedule caesarean section.

Clinical assessment was done in two phases-

First assessment was a general review of women's medical history and eligibility for method. The following points were noted and documented: Condition which make IUCD is not a good choice for this women, known distorted uterine cavity (uterine septum, fibroid uterus), acute purulent discharge, high individual likely wood of exposure to gonorrhea or Chlamydia, malignant or benign trophoblastic disease, suffering from AIDS and not clinically well or on antiretroviral therapy

Second assessment was done prior to insertion to assess those criteria which may change as a result of labour and birth to document following points: chorioamnionitis, postpartum endometritis or puerperal sepsis, more than 18 hours from the rupture of membranes to delivery of baby, unresolved postpartum hemorrhage, extensive genital trauma where repair would be disrupted by postpartum IUCD.

Type of insertion:

Post Placental: it was done immediately following delivery of placenta within 10 minutes with either of the following techniques: By instrumental insertion using (Kelly) forceps or manual post placental insertion

Intracaesarean or post placental: it was done manually or using ring forceps after the placenta was removed.

Postpartum insertion: it was done within 48 hours following birth of baby.

PPIUCD insertion technique:

All necessary instruments (Copper T 380A, Kelly's forceps, ring forceps, Sim's speculum, head lamp, Povidone Iodine, Savlon, kidney dish and cotton swabs) were arranged on top of an auxiliary table covered with a sterile drape.

The anterior lip of the cervix was gently grasped with ring forceps closing the forceps one notch only. The IUCD was removed from the insertion sleeve and grasped with the Kelly`s forceps using a no-touch technique. The IUCD was then inserted through the dilated cervix to the level of the uterine fundus, and was confirmed by palpation with a hand placed on the abdomen overlying the fundus. The Kelly forceps were oriented so that the arms of the IUCD lies parallel to the anterior and posterior walls of the uterus and then the forceps was taken along the side wall of uterus up to fundus and was opened to release the IUCD and forceps taken back alongside wall of uterus. The cervical os was then gently inspected with the Sims speculum for the strings. If the strings were visible then the IUCD was reinserted. Before discharge, the patient was assessed and asked about any fresh symptoms.

Statistical analysis: Data entry was done using Statistical Package for the Social Sciences (SPSS) version 17.0 for statistical analysis. Descriptive data were summarized as percentages or means. The Chi-square test was used to measure the strength of associations between variables, a p-value of <0.05 was considered to be statistically significant.

III. RESULTS

The total number of deliveries during the study period were 4695. Among these deliveries 1941 women were eligible for PPIUCD insertion. A total number of 423 (21.77%) women accepted PPIUCD insertion while 1518 (78.23%) women, i.e. almost three quarters of them declined insertion. Out of total 1941 women, 1121 were eligible after normal delivery. Among these, 100 (8.92% of normal delivery) women had postplacental insertion and 27 (2.4% of normal delivery) women had postpartum insertion. Among those who underwent caesarean section, the number of eligible women were 820, and out of these 296 (36.09%) of caesarean section had trans caesarean insertion as shown in figure 1. The PPIUCD inserted women were followed up at post-partum six weeks. A total 274 women were followed.

Table 1 shows various parameters. Among various parturient studied, majority were in age group of 20-29 years (55.3%). Their mean age was 27.6 (SD ± 5.68). Highest percentage of acceptance was in ≤ 19 years but there was no significant association with age (P=0.511). Most of the study population had at least primary level of education (45%). Highest percentage of acceptance was seen with secondary education (34.54%) but there was no significant association (P= 0.083). Majority of women in study were primiparous (44.9%) mean parity was 2. Highest percentage of acceptance was found in primiparous (28.09%) but there was no

significant association (P =0.593). Majority of women study had last child birth below years (44.9%) and had significant percentage of association between last child birth and acceptance (P= 0.003) with highest percentage of acceptance who were having last child birth below 2 years (27%). Women who had future pregnancy desire between 3-4 year had highest percentage of acceptance (34%) although there is no significant association between PPIUCD acceptance and future pregnancy desire (P= 0.248). There was highest percentage of acceptance in women with caesarean section with significant association (P= 0.004) in comparison to normal vaginal delivery.

About quarter of the parturient were aware of the PPIUCD. Among 96 of the parturient who were aware of PPIUCD, majority (75.0%) had the antenatal clinic as their source of information as shown in table 2.

Total of 1518 parturient (78.23%) declined the use of PPIUCD, among these majority were prefer other forms of contraception (30%). On the other hand more than half (54.8%) of those women who accepted PPIUCD were due to the reason of its long term effect. About one third (34.9%) were accepted due to reversibility. Total percentages more than 100% shows there were multiple responses as shown in table 3

Table 4 shows that total of 1518 parturient (78.2%) declined the use of PPIUCD. Among those parturient who declined the PPIUCD, majority of them (47.5%) did not want any method of contraception. Those who wanted contraception they preferred ligation (25%).

Among 423 parturient of PPIUCD insertion, 274 (64.77%) were followed and 149 (35.23%) were lost follow up. Out of 274 parturient who were followed up after PPIUCD insertion, 52(19%) developed bleeding problems in the form of increased duration of bleeding or irregular bleeding as shown in table 5. There was missed thread in 35 (12.7%). There was no parturient who had uterine perforation. 170 (62%) were satisfied and had no complain.

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FIGURE 1

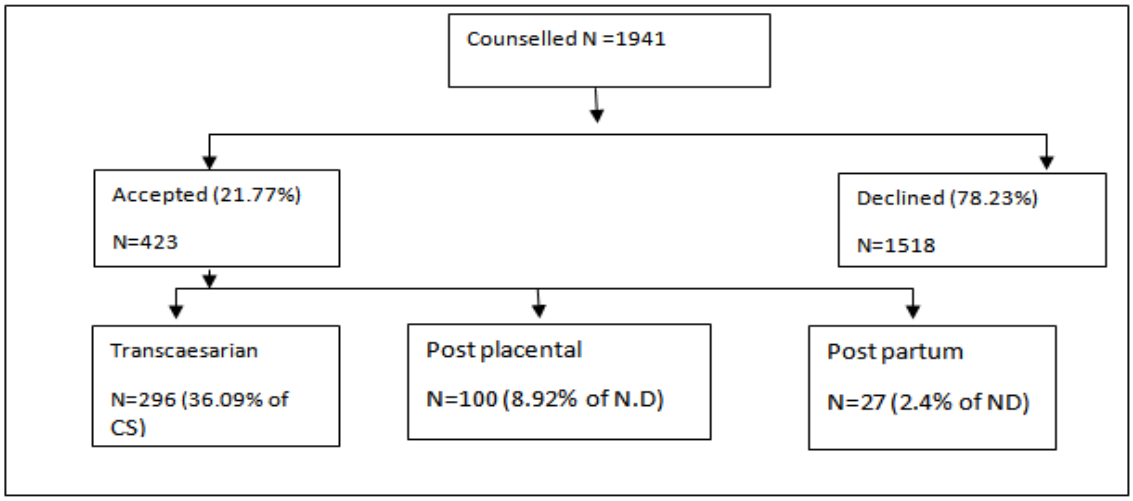

Figure 1: Recruitment of study participants

TABLE 1-5

	Parameters	Total 1941	Accepted 423	Decline 1518(%)	P value
Age	≤ 19 years	116 (5.9%)	29(25%)	87(75%)	0.511
	20-29 years	1073 (55.3%)	219(20.5%)	854 (79.5%)	
	30-39 years	718 (36.9%)	134(18.67%)	584 (81.33%)	
	≥ 40 years	37 (1.9%)	8 (21.6%)	29 (78.4%)	
Education	No formal education	640(33%)	93 (14.54%)	547 (85.46%)	0.083
	Primary education	873 (45%)	202(23.14%)	671(76.86%)	
	Secondary education	330 (17%)	114(34.54%)	216 (65.45%)	
	Higher education	97(5%)	14(14.44%)	83 (85.56%)	
Parity	1	872(44.9%)	245 (28.09%)	627 (71.91%)	0.593
	2	586 (30.1%)	128 (22.45%)	458(78.55%)	
	3	321 (16.5%)	32(10%)	289(90%)	
	4	110(5.6%)	14 (12.7%)	96(87.3%)	
	≥5	52 (2.6%)	4 (7.7%)	48(92.3%)	
Last child birth	0-2	872(44.9%)	235(27%)	637(73%)	0.003
	2-3	486(25%)	106(21.8%)	380(78.2%)	
	3-4	389(20%)	60(15.4%)	329(84.6%)	
	≥5	194(9.9%)	22(11.34%)	172(88.76%)	
Future pregnancy desire	1-2 year	291(15%)	19(6.5%)	272(93.5%)	0.248
	3-4year	776(40%)	263(34%)	513(76%)	
	5 years	485(25%)	145(30%)	340(70%)	
	Not sure	389(30%)	20(5.1%)	369(96.9%)	
Mode of delivery	Normal vaginal delivery	1121 (57.76%)	127 (11.33%)	994 (88.67%)	0.004
	Caesarean section	820 (42.24%)	296 (36.09%)	524 (63.91%)	

Table 1: various parameter causing acceptance and declining PPIUCD insertion

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Source	Accepted N = 25	Declined N = 71	Total N=96
Antenatal Clinic	17 (68.0%)	55 (77.5%)	72 (75.0%)
Family Planning Clinic	5 (20.0%)	9 (12.7%)	14 (14.6%)
Relative/Friend	3 (12.0%)	7 (9.8%)	10 (10.4%)

Table 2: Source of information for the parturient who were aware of PPIUCD (N=96)

Declining (N= 1518)			Accepting(N=423)		
Reason	Number	Percent	Reason	Number	Percent
Prefer to use another method	455	30%	Long term	232	54.8%
Satisfied with previous contraceptive method	227	15%	Reversible	148	34.9%
Need to discuss with my partner	197	13%	Safe	97	23%
Fear of pain and heavy bleeding	151	10%	Fewer Clinic visits	67	15.8%
Partner refusal	136	9%	Non hormonal	46	10.8%
Don't want contraception immediately	106	7%	No Remembrance once inserted	38	9%
No reason	48	3.1%	No interference with breast feeding	21	5%

Table 3: Various outcome of PPIUCD insertion and its overall contribution

Method	Number	Percent
No method	721	47.5%
Ligation	379	25%
Oral contraceptive pills	151	10%
Interval IUCD	136	9%
Male condom	106	7%

Table 4: Parturient preference for other form of contraception, among those declining PPIUCD insertion (N=1518)

Complications	Number	Percent
Irregular bleeding / increased duration of bleeding	52	19%
Missed thread/ displacement	35	12.7%
Infection	12	4.3%
Removal	11	4%
Expulsion	8	3.1%
Uterine perforation	0	0%
Satisfied	170	62%

Table 5: Complications at 6 weeks after PPIUCD insertion (N=274)