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Post Partum – Intrauterine Device Insertion – 2yr Experience at a Tertiary Care Center in Guntur Medical College /Govt. General Hospital, Guntur

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Background and objectives: *Post partum period is ideal time for family planning counseling. Accessibility to health care facility is more during this period in our country. In view of repeated pregnancies with less gap between pregnancies, the present study is planned to evaluate the efficacy, safety, compliance of immediate post-partum IUD insertion in women delivering vaginally or by caesarian section in a tertiary care facility, during a period of 2 years (ie. 2013 February to 2015 February).*

Methods: *The women recruited had CuT-380A insertion immediately after delivery of the placenta in normal delivery or caesarean section. Women having post-partum haemorrhage (PPH), pre-labour rupture or membranes (PROM) >18 hrs, fever >38^{0}C, congenital malformation and fibroid uterus were excluded from the study. The women were followed up at 6 wks and 6 months after delivery.*

Results: *Total women counseled 1000, accepted 246, declined 754, lost to follow up 46, followed up 200, complications 62 (Expulsion 7, Bleeding 23, String problem 32, Removal 11, continuation 182)*

Interpretation and conclusions: *Immediate post-partum IUCD insertion provides highly effective contraception immediately after delivery. Although the expulsion rate for immediate post-partum is higher than for interval insertion particularly in country where women have limited access to medical care. The government needs to develop strategies to increase public awareness of the PPIUCD through different media sources. It is also important to arrange training on PPIUCD in order to increase knowledge and skills among health care providers. This will also further promote PPIUCD use and aid in reduction of expulsion rates. Case incentives to the acceptor, motivator and provider will bring about substantial progress in the PPIUCD use in developing countries like India.*

Keywords: *Post-partum contraception, Intrauterine device, Expulsion, Intra caesarean insertion.*

I. Introduction

Introduction of JSY and JSSK has increased institutional deliveries. Labour room is attended by large numbers of beneficiaries every day , delivery provides a convenient opportunity for the woman to receive IUCD services. This is particularly important for woman who has limited access to medical care.

In India, 65% of women in the first year of post-partum period have an unmet need for family planning. Hence contraception needs to be practiced in this critical period. Studies show that pregnancies taking place within 2 yrs of a previous birth have increased risk of adverse out comes like abortions, premature labour, post-partum hemorrhage, low birth weight babies, foetal loss and maternal morbidity and mortality.

Post-partum period is crucial time when both women and new born require special and integrated package of health services as morbidity and mortality rates are quite high.

IUCD is most commonly used reversible method of contraception worldwide with about 127 million current users. Insertion of an IUCD immediately after delivery is appealing for several reasons. The women are not pregnant and are motivated for contraception and situation is convenient for women and providers. The evidence for post-partum IUCD insertion was weak when this study was undertaken. Hence the present study was planned to evaluate the safety and efficacy of insertion of immediate post-partum IUCD in women delivering vaginally or by cesarean section.

II. Materials And Methods

This is a prospective study was carried out in the department of OBG, GMC/GGH from 2013 to 2015. Women delivering in the hospital fulfilling inclusion criteria was included in the study after obtaining informed consent. The study protocol was approved by the ethics committee.

Objectives

1. To determine proportion of women accepting immediate PPIUCD insertion
2. To describe the factors associated with acceptability to immediate PPIUCD in women according to their socio-demographic and obstetrics characteristics, and future pregnancy desires.
3. To determine the rates of uterine perforation, expulsion, pelvic infection, lost strings and displacement following PPIUCD insertion among the acceptors for 6 months.

The test of proportion (z test) was applied for statistical analysis.

Inclusion criteria: All antenatal patients admitted for delivery to our hospital were counseled for PPIUCD. Consent was obtained from those, who opted for insertion; Among those who fulfilled the following criteria were considered for inclusion.

- 18-45 years old
- GA 36-40 weeks
- Desire to have CuT after counseling before insertion
- No infections
- Hb ≥8 gl/dl
- AMTSL universally provided after the delivery of the infant

Exclusion criteria : According to medical eligibility criteria for IUCD by WHO,

- Fever during labour and delivery (Temp > 38^0c)
- Having active STD and other genital tract infection or high risk for STD
- Know to have ruptured membranes for >18 hrs prior to delivery.
- Known uttering abnormalities ef. Bicornuate/septate uterus, uterine myomas.
- Manual removal of the placenta
- Unresolved postpartum hemorrhage (PPH) requiring use of additional oxytocic agents in addition to AMTSL.

Insertion techniques

Post-Placental Insertion

All necessary instruments (CuT 380 A, 2 ring forceps, Sim's speculum, over head lamp. Povidone Iodine, kidney tray, and cotton swabs) were arranged on an auxiliary table covered with a sterile drape. Insertion was performed by the consultant using modified Kelley placental forceps. The patient was placed in a lithotomy position with buttocks at the edge of the table. Aseptic techniques were inforced throughout the procedure issued. The uterus was palpated to evaluate the height of the fundus and its tone. This is important to assess the size of the uterus to know whether the strings are likely to protrude through the cervix even when CuT is placed at fundus. After performing the appropriate hand washing, a pair of sterile gloves was worn. The perineum was cleaned with povidone iodine. The perineum, libia, and vaginal walls were inspected for lacerations. HLD Sim's speculum was gently inserted into the vagina to visualize the cervix. The cervix and the vaginal walls were cleaned twice with cotton swabs soaked in povidone iodine solution with speculum in place. The anterior lip of the cervix was then gently grasped with the same ring forceps used earlier.

The IUCD was removed from the insertion sleeve and grasped with the modified Kelley forceps using no-touch technique. Once it is inserted into lower uterine segment. Other hand was removed to abdomen; and placed over the fundus and uterus was pushed gently upward to reduce the angle and curvature between the uterus and vagina. IUCD with forceps was moved upward until it can be felt at the fundus. Then the forceps were opened to release the IUCD and swept to side wall. Uterus was stabilized until forceps removal was complete. The cervical os was then gently inspected for the strings. Sims speculum was removed. She was allowed to take rest for some time.

Intra-Cesarean Insertion of the IUCD

Uterine cavity was inspected for presence of malformations following placental delivery, which would limit used of IUCD. The IUCD was removed from the insertion sleeve and placed on the sterile field. Uterus is stabilized by grasping it at fundus. IUCD is hold between middle and index finger. It was inserted into the uterus through uterine incision and released at fundus of uterus. Hand was removed slowly from the uterus. Enough care was taken not to dislodge IUCD as hand is removed. Strings were guided toward the lower uterine segment without disturbing IUCD;s fundal position. Enough care was taken not to include IUCD strings during uterine closure.

Later prior to discharge

- Discharge card showing type of IUCD and date of insertion were given.
- She was informed about the IUCD side effects and normal postpartum symptoms.
- Woman was told when to return for IUCD follow-up/PNC/newborn checkup. (4-6 weeks)
- She was advised to come back any time she has
  - Foul smelling vaginal discharge different from the usual lochia
  - Lower abdominal pain, especially if accompanied by not feeling well, fever or chills
  - Felling of being pregnant
  - Suspicion that the IUCD has fallen out.

Fig. 1. Recruitment of the participants and summary of the findings

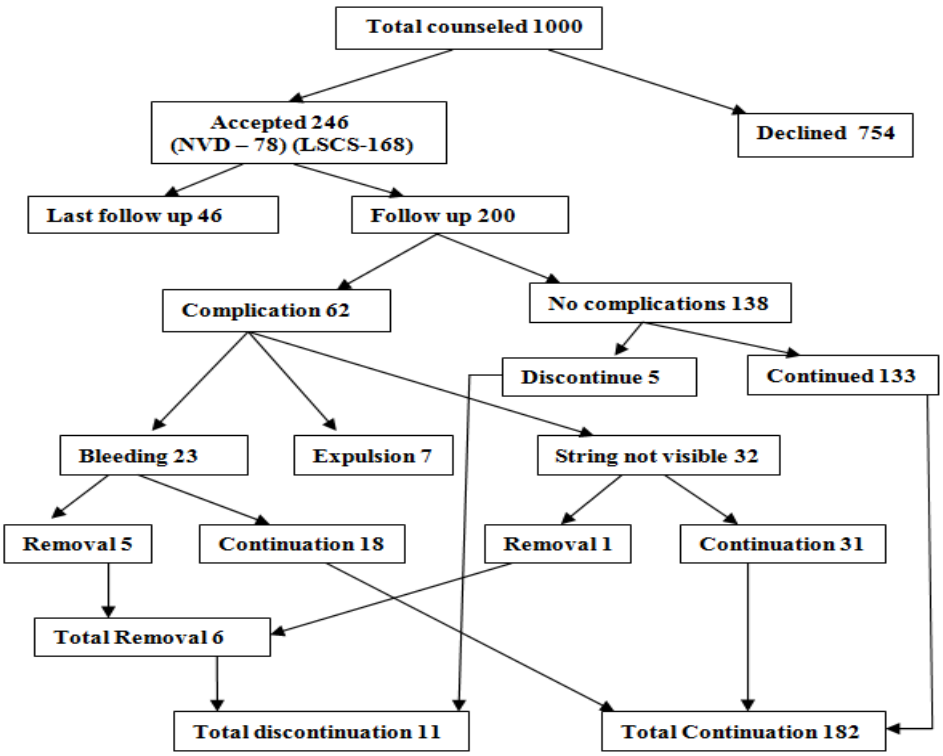

Table I. Socio demographic and obstetric characteristics of the parturient included in the study.

Characteristics	Total counseled	Accepted		Declined	
	N=1000	N=246	N (%)	754	N (%)
Age					
<19	59	2	3.3	57	96.61
20-29	558	138	24.73	420	75.26
30-39	383	106	27.67	277	72.32
Education					
No formal education	42	3	7.1	39	92.84
Primary	293	118	40.27	175	59.72
Secondary	601	119	19.80	482	80.19
Higher education	64	6	9.37	58	90.62
Economic status					
Low	647	166	25.65	481	74.34
Medium	308	68	22.07	240	77.92
High	45	12	26.66	33	73.33
Parity					
1	572	180	31.46	392	68.54
2	348	56	16.09	292	83.91
3	80	10	12.05	70	87.5
Last child birth					
0-2	608	142	23.35	466	76.64
2-3	189	68	35.97	121	64.02
3-4	172	22	12.79	150	87.20
≥ 5 yrs	31	14	45.16	17	54.83

II. Reasons for acceptability among the parturient included in the study

Reason for acceptability	Number	Percentage
Long term	136	55.28
Safe	51	20.73
Fever clinic visit	35	14.22
Reversible	24	9.75

III. Reason for refusal among the parturient included in the study

Reason for refusal	Number	Percentage
Fear of complication	248	32.89
Family refusal	154	20.42
Another method	352	46.68

IV. Complications

Complications	Number	Percentage
Bleeding	23	11.5
Expulsion	7	3.5
Strings not visible	32	16
Pelvic infection	0	0
Pregnancy	0	0

V. Timing and rate of expulsion in the study

Timing and rate of expulsion	Number	Percentage
Within 7 days	1	0.5
Between 7 days and 4 weeks	5	2.5
After 4 weeks	1	0.5

VI.Reason for removal of IUCD in the study

Reason for removal	Number	Percentage
Bleeding	3	27.27
Menstrual disturbances	2	18.18
Pressure from family	3	27.27
Others including string problem	2	18.18
Pain in the abdomen	1	9.09

VII. Continuation rate (post placental 78 + intracesarean 168) in the study

Continuation rate	Number	Percentage
Total insertion	246	
Total follow up	200	
Expulsion	7	3.5
Removal	11	5.5
Continuation	182	91

VIII. Continuation rate in both groups of clients having and not having complications in the study

Status	Number	Removal no	Percentage	Continuation	Percentage
Having complications -Expulsion	7				
- Bleeding	23	5	21.73	18	78.26
- String problem	32	1	3.12	31	96.88
No complications	138	4	2.89	134	97.11

III. Discussion

Majority of the women (95.8%) in the study population had at least a primary level of education. Acceptance of PPIUCD was higher among women with primary and secondary education (40.27 & 19.80%) than those with no formal or higher education (7.1 &9.37%). This was similar to a study done in Egypt by Safwat et al (1) where women with no formal education had an acceptance of 9.4%, while those with formal education were 19.4%.

Education has a positive effect on contraceptive use as shown in the study in Zimbabwe. It was only apparent among women who completed secondary education (12 years or more). Women who completed secondary school were about twice as likely to use modern contraceptive methods as women who did complete primary education. In this study, it is as high as fourfold (2). Acceptance of intrauterine contraceptive device was the most common among primigravida women (31.46%). In case of multiparous it was (12.5%), this finding is contrary to that of the study by Grimes et al (3) where they found higher acceptance in multiparous clients (65.1%). The duration since last child birth was significantly associated with acceptance of PPIUCD. About 75% of the PPIUCD acceptors had their last child birth less than 2 yrs. Women who came for first delivery with short pregnancy interval felt the need for a long acting and reliable methods of contraception. In a report released by WHO in 2006, better family planning and birth spacing services resulted in better maternal and neonatal outcome. When promoted in countries with high birth rates, 32% of all maternal deaths and over one million deaths of children under 5 yrs could be prevented. Healthy timing and spacing of pregnancies have a positive effect on maternal health and new born outcomes (4). This finding in the study indicates towards a positive maternal health in future.

PPIUCD has distinct advantage. It is free from systemic side effects and does not affect breast feeding as seen with hormonal methods. It is a reversible method. PPIUCD does not require regular user compliance. It is also not coital dependent and there is no pain on insertion when used post-placentally.

There were no cases of perforation or misplaced IUCD in the present study. Global health technical briefs on immediate post partum insertion safety and efficacy said that there are few reported addressing the relative safety of immediate post-partum insertion.

Future pregnancy desire remaining almost same in both groups of acceptors and non acceptors. This finding suggests that the program manager must give priority towards effective antenatal counseling on PPIUCD, as minimal afford would bring about a great change.

A significant number of women declined PPIUCD because of partners (husband) and family members non-involvement. This reveals the importance of partner involvement during counseling and decision making. Many studies have shown that when the partner is involved in contraceptive counseling and decision making, the acceptance and continuation rates were higher. Therefore it is most important to include proper counseling of the couple together to choose a contraceptive method which will in turn incrase the compliance. Husband and other family member's pressure for IUCD removal was a significant reason (27.27%) for removal next to bleeding and menstrual disturbance (45.45%), these findings emphasize the important of involving the husband in prenatal counseling.

Like other studies (5) bleeding (27.27%) out numbers other complications. It is really worrying. But only 6 out of 62 (9.67%) insisted on removal, rest retained IUCD with reassurance only, which speaks of the importance of positive attitude. Thirty two (16%) among those inserted with PPIUCD had lost strings during first follow up at 4-6 wks. In 28 cases, strings were found at cervical canal. Rest four cases needed ultrasound and confirmed that the IUCD was insitu. One of them insisted on removal. On removal, curling and retraction of strings into the uterine cavity were confirmed. It should be noted that there were no serious complications in the study. Expulsion rates of the immediate PPIUCD at 4-6 wks interval were 7 (3.5%). This was similar to a multicountry study done in Belgium, Chile and Phillippines which showed the rate of expulsion at 1 month ranging from 4.6 to 16 % (6). Removal rates are similar in clients having or not having complication (27.27%). It speaks of the importance and motivation prior to insertion in continuing PPIUCD.

In the present study there were no cases of PID. A study conducted in 13 countries studies infection (PID) due to IUD. They have reported similar rate of infection with immediate insertion and interval insertion. Another trial did not find any instance of infection due to post-partum IUCD.

Expulsion rate of immediate PPIUCD in a study done in China by Chi et al 1994, was 25 – 37%, whild post-placental was 9.5 – 12.5%. Expulsion of PPIUCD usually occurs in the first few months after insertion. In a multicenter study done y Tatum et al, the expulsion rates of PPIUCD were similar at 1 and 12 months in Belgium (4%) and Chile (7%), while in the Philippines, expulsion increased from 19% at 1 month to 28% at 12 months follow-up.(7)

IV. Conclusion

The acceptance of PPIUCD was high in present study and it is comparable to other studies done globally. Awareness of PPIUCD among these women was very poor despite high acceptance. Majority of the women never heard about PPIUCD before admission to labour room. Parturient who had a short duration from their last child birth (< 2yrs) and primigravida had greater acceptance of PPIUCD. Acceptance was high among women who had primary education.

The PPIUCD was demonstrably safe, having no reported incidence of perforation with low rates of expulsion, pelvic infection, and few lost strings.

We can conclude that inserting CuT 380A within 10 min after placental delivery is safe and effective, has high retention rate. The expulsion rate was not high, and further can be reduced with practice. With the high level of acceptance, despite low levels of awareness, the government needs to develop strategies to increase public awareness of the PPIUCD through different media sources. It is also important to give training on PPIUCD in order to increase knowledge and skills among health care providers. This will also further promote PPIUCD use and aid in reduction of the expulsion rates.

In a nation which moves with discounts, subsidies and incentives, cash incentives to the acceptor, motivation and of course provider would bring about a substantial progress in the PPIUCD use in developing countries like India.

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