

EVALUATE THE OUTCOMES OF INTRAUTERINE COPPER DEVICE CUT380A AS POST-PARTUM IUCD

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Abstract

Background: Contraception is the prevention of conception by methods other than abstinence from coitus. It is used to limit the size and age structure of a family by birth control or family planning. Various contraceptive options for postpartum women are Progesterone Only Pills (POP's), Depot Medroxy progesterone acetate (DMPA), Intra Uterine Contraceptive Device (IUCD), male condom which have been recommended during lactation. Intrauterine contraceptive device (IUCD) is a small, flexible plastic frame which usually has copper sleeves or wires around or impregnated with levonorgestrel hormone. **Materials and Methods:** This is a prospective study conducted in the department of Obstetrics and Gynaecology at a tertiary care hospital over a period of 1 year duration. At the study centre, all data related to family planning procedures is routinely noted down in prospective manner in case record sheets. We included all women who underwent IUCD insertion at the study centre during the above period. We divided them into postpartum (≤ 6 weeks after delivery) and interval (> 6 weeks after delivery) groups. Postpartum group included only those women who had vaginal delivery or caesarean section at our centre. **Result:** In our study depicts that out of 8543 vaginal deliveries conducted 192(2.24%) had taken Post-Partum IUCD Whereas out of 5858 caesarean section conducted 308(5.25%) had taken Post-Partum IUCD and Overall, 500(3.47%) patients had taken PP IUCD out of 14,401 deliveries conducted. Rate of Expulsion of different type of Post-Partum IUCD at 3months. Intra-caesarean type were associated with maximum expulsion rate of 6.5% followed by Immediate Post-Partum type i.e. 6.1% and Extended Post-Partum type had the least Expulsion rate of 3.2% but the difference in Expulsion Rate in different types of PP IUCD is not statistically significant ($p>0.05$). The overall Expulsion Rate of Post-Partum IUCD at 3 months was 5.6%. **Conclusion:** For these women, the only opportunity to receive information about contraceptives is during childbirth when they are in contact with medical personnel. Hence, it is suggested that family planning should be integrated with maternal and child-care services in order to effectively promote the use of IUCDs.

INTRODUCTION

Contraception is the prevention of conception by methods other than abstinence from coitus. It is used to limit the size and age structure of a family by birth control or family planning. It is essential to the health and welfare of the individuals, families and whole communities.^[1]

Contraception has been practised in one form or the other throughout history. Sex urge is the mechanism where nature ensures the continuance of the race. Contraception aims at separating means from the

end and allowing the partners free expression of their sexual needs without incurring the risk of unwanted children. By preventing high risk and unwanted pregnancies, it decreases maternal deaths.^[2]

The total world population was estimated to be about 6 billion in the last century. At that time, the rate of increase of population was about 10 million per year. If this rate continues, the projected population would be 8000 million in 2025.^[1] India, second to china with respect to population, has 2.5 of the world's total land surface area and

accommodates about 16% of the world population. The density of population is 300 per sq. Kilometre.^[1] In 2003, the death rate stood at a level of 8 per 1000 and the birth rate at 25 per 1000. This wide gap between births and deaths resulted in a rapid rise of population.^[3,4]

In India, during the period 1991-2001, the population increase was to the extent of 160 million, which means an increase of 16 million people per year. India's population reached 1027 million in 2001 and projected population in 2025 is 1,363 millions. In 2050 it is expected to reach 1628 millions, when India would be the world's most populous country.^[5]

Maternal mortality and morbidity could be significantly reduced by effective use of contraception. Thus contraception prevents too early, too frequent and too many pregnancies and the resultant number of unsafe abortions.^[6]

There was about 168 million eligible couples in India according to census 2001 of which only 44% are practising effective contraception. Studies have shown that among women who are 0-12 months postpartum, the unweighted average level of unmet need for contraception across 27 countries is 65%. In Asian countries among half of the unmet need among postpartum women is for birth spacing.^[7]

A consensus statement by WHO in Bellagio, Italy in 1988, confirmed that breast feeding alone can be regarded as effective contraception methods (2% failure rate) in first 6 months postpartum provide the baby is fully breastfed and menses have not yet resumed.^[3] However the return of menses and ovulation can be quite variable and is often unpredictable. Most mothers who do not breast-feed, resume menses within 4- 6weeks postpartum 4,5 and first ovulation on an average 45 days postpartum⁶. In the absence of contraception, 50% of these women will have conceived again by about 3 months and 85% by 6 months.^[7] Pregnancy may occur in an individual woman, who is fully lactating as early as 10 months postpartum and about 3-8% are likely become pregnant even without resuming their menses.^[8]

Various contraceptive options for postpartum women are Progesterone Only Pills (POP's), Depot Medroxy progesterone acetate (DMPA), Intra Uterine Contraceptive Device (IUCD), male condom which have been recommended during lactation.^[9,10]

Intrauterine contraceptive device (IUCD) is a small, flexible plastic frame which usually has copper sleeves or wires around or impregnated with levonorgestrel hormone.^[11]

MATERIALS AND METHODS

This is a prospective study conducted in the department of Obstetrics and Gynaecology at a tertiary care hospital over a period of 1 year duration. At the study centre, all data related to

family planning procedures is routinely noted down in prospective manner in case record sheets. We included all women who underwent IUCD insertion at the study centre during the above period.

We divided them into postpartum (≤ 6 weeks after delivery) and interval (> 6 weeks after delivery) groups. Postpartum group included only those women who had vaginal delivery or caesarean section at our centre. We further subdivided the postpartum group into immediate postpartum (within 10 min after expulsion of placenta) and delayed postpartum (between 10 min to 48 h of delivery) groups. Those women who had copper T insertion done outside the study centre or delivered outside our hospital were excluded from the study.

IUCD Insertion and Follow-up

Every patient eligible for IUCD insertion after delivery was counseled to choose between postpartum (immediate or delayed) or interval insertion. Kelley's forceps was used for immediate postpartum insertion of CuT380A after vaginal delivery and 'no touch' technique was used for interval insertion. All doctors who performed IUCD insertion were adequately trained for the procedure and a standardized protocol was followed. The cohort of patients underwent follow up at 6 weeks, 12 weeks and then at 6 months. At every follow up patients were asked about any complaint and whether they were able to feel the thread of IUCD or not.

If they were not able to feel the thread, in situ position of copper T was confirmed by clinical examination/ X-ray examination/ultrasound wherever needed. If after above examination copper T was found in situ, the case was categorized under inability to feel thread. If no copper T was found inside, it was considered as a case of spontaneous expulsion. The reasons for IUCD removal were also noted. These included irregular bleeding per vaginum (BPV), chronic pelvic pain, pelvic infection or patient's willingness to use either permanent method or another method of contraception. Failure was confirmed with confirmation of pregnancy while copper T was still in situ.

RESULTS

[Table 1] depicts that out of 8543 vaginal deliveries conducted 192(2.24%) had taken Post-Partum IUCD Whereas out of 5858 caesarean section conducted 308(5.25%) had taken Post-Partum IUCD and Overall, 500(3.47%) patients had taken PP IUCD out of 14,401 deliveries conducted.

[Table 2] gives information regarding the purpose of use of contraception by the subjects. It is found that majority of subjects were using Post-Partum IUCD as a temporary method for birth spacing (67.2%) and rest (i.e.32.8%) were using it for limiting family size.

[Table 3] depicts that maximum no of Post-Partum IUCD inserted were of Intra-caesarean type i.e. 308 (61.6%) followed by Extended Post-Partum type i.e. 126(25.2%) and least no. of cases i.e.66(13.2%) were of Immediate Post-Partum type.

[Table 4] reveals the Rate of Expulsion of different type of Post-Partum IUCD at 3months.Intra-caesarean type were associated with maximum expulsion rate of 6.5% followed by Immediate Post-Partum type i.e. 6.1% and Extended Post-Partum type had the least Expulsion rate of 3.2% but the difference in Expulsion Rate in different types of PP IUCD is not statistically significant ($p>0.05$). The overall Expulsion Rate of Post-Partum IUCD at 3 months was 5.6%.

[Table 5] depicts the Rate of Expulsion of Post-Partum IUCD in association with Parity at 3 months. Higher Rate of Expulsion i.e. 6.6% were associated with Multi than in Primi in which Rate of Expulsion was 4.1% but the difference is not statistically significant ($p >0.05$).

[Table 6] depicts the Rate of Expulsion of Post-Partum IUCD in association with Presence of

Infection at 3 months. The Rate of Expulsion is higher in presence of Infection (i.e. 22.7%) than those without the presence of Infection (i.e. 3.9 %) and the association of rate of Expulsion with infection is statistically significant ($p<0.001$).

[Table 7] depicts the Rate of Missing Strings in association with different type of Post-Partum IUCD at 3 months. Higher Rate of Missing String was seen in Intra-caesarean type (i.e. 11.4%) than Immediate Post-Partum type (i.e.10.6%) and a lesser rate is seen with Extended Post-Partum type (i.e.7.9 %) but the difference is not statistically significant ($p>0.05$).

[Table 8] depicts the Rate of Missing Strings in association with Parity at 3 months. Higher Rate of Missing String was seen in Multi (i.e.11.8%) than in Primi (i.e. 8.2 %) but the difference is not statistically significant ($p>0.05$).

[Table 10] Reveals about the Satisfaction of patient in different type of Post-Partum IUCD at 3 months. It is maximum in Immediate Post-Partum type (i.e.93.9%) followed by Intra-caesarean type (i.e.92.5%).

Table 1: Distribution of acceptors of PP IUCD acceptors among the total of deliveries

Type of delivery	No. of patients delivered	No. of patients taking PPIUCD	Percentage
Vaginal delivery	8543	192	2.25
Caesarean section	5858	308	5.26
Total	14,401	500	3.47

Table 2: Distribution of cases according to purpose of PP IUCD i.e. CuT380A

Purpose of using contraception	No. of cases (n=500)	Percentage
Birth spacing	336	67.2%
Limiting family size	164	32.8%
Total	500	100

Table 3: Distribution of cases according to types of Post-Partum IUCD insertion.

Type of PP IUCD	No. of cases	Percentage
Immediate postpartum (within 10 minutes)	66	13.2
Extended postpartum (Within 48 hours)	126	25.2
Intra-caesarean	308	61.6
Total	500	100

Table 4: Rate of Expulsion at 3 months with different type of Post-Partum IUCD.

Type of Post-Partum IUCD	Expulsion No.(%age)	No Expulsion No.(%age)	Total
Immediate Postpartum	4(6.1%)	62(93.9)	66
Extended Post Postpartum	4(3.2%)	122(96.8%)	126
Intra-caesarean	20(6.5%)	288(93.5%)	308
Total	28(5.6%)	472(94.4%)	500

Table 5: Expulsion at 3 months in association with Parity.

Parity	Expulsion	No Expulsion	Total
Primi	8(4.1%)	187(95.9%)	195
Multi	20(6.6%)	285(93.4%)	305
Total	28(5.6%)	472(94.4%)	500

Table 6: Expulsion rate at 3 months in association with infection.

Infection	Expulsion	No Expulsion	Total
Present	10(22.7%)	34(77.3%)	44
Absent	18(3.9%)	438(96.1%)	456
Total	28(5.6%)	472(94.4%)	500

Table 7: Distribution of cases according to Missing Strings at 3 months in different type of Post-Partum IUCD.

Type of IUCD	Strings seen	Missing Strings	Total
Immediate Post-Partum	59(89.4%)	7(10.6%)	66

Extended Post-Partum	116(92.1%)	10(7.9%)	126
Intra-caesarean	273(88.6%)	35(11.4%)	308
Total	448(89.6%)	52(10.4%)	500

Table 8: Distribution of cases according to Missing Strings in association with parity at 3 months

Parity	Strings seen	String not seen	Total
Primi	179(91.8%)	16(8.2%)	195
Multi	269(88.2%)	36(11.8%)	305
Total	448(89.6%)	52(10.4%)	500

Table 9: Distribution of cases according to the causes of Post-Partum IUCD Removal at 3 months.

Causes of PP IUCD Removal	No. of Cases removed	percentage
Abnormal bleeding P/V	8	66.7
Pain abdomen	1	8.3
White discharge	2	16.7
Infection	1	8.3
Dyspareunia	0	0
Pain in waist	0	0
Total	12	100

Table 10: Distribution of cases according to patient Satisfaction with Post-Partum IUCD at 3 months.

Type of IUCD	Satisfied	Not satisfied	Total
Immediate Post-Partum	62(93.9%)	4(6.1%)	66
Extended Post-Partum	115(91.3%)	11(8.7%)	126
Intra-caesarean	285(92.5%)	23(7.5%)	308
Total	462(92.4%)	38(7.6%)	500

DISCUSSION

In our present study, we have studied CuT 380A as a method of postpartum contraception. In the present study, 500 cases were taken out the deliveries conducted over that period basing upon the exclusion criteria, PP IUCD inserted after counselling and taking both Verbal and written consent, and follow up is done at 3 months and 6 months clinic visits and telephonic communication. From [Table 1] it is evident that out all vaginal deliveries during that period 2.25% of the patients had taken CuT 380A as Post-Partum IUCD whereas out of all caesarean section conducted 5.25% of the patients had taken the same and overall rate of PP IUCD insertion during the same period was 3.47% the major cause of non-acceptance being the false believes regarding the IUCD insertion and the rate of IUCD insertion can be improved by mass education and counselling of the patients in the Post-Partum period.

An attempt was made to elicit the information regarding the purpose of use of contraception by the subjects and the data analysed in [Table 2]. It is found that majority of subjects were using Post-Partum IUCD as a temporary method for birth spacing (67.2%) and rest (i.e.32.8%) were using it for limiting family size because most of the patient in our study group belong to age group 18-25, they don't want any permanent method of contraception.

[Table 3] depicts that maximum no of Post-Partum IUCD inserted were of Intra-caesarean type i.e. 308 (61.6%) followed by Extended Post-Partum type i.e. 126(25.2%) and least no. of cases i.e. 66(13.2%) were of Immediate Post-Partum type. As stated previously max no of PP IUCD insertion are of Intra-caesarean type because of self-motivation

about the risk of scar rupture in future pregnancy. The no. of extended Post-Partum IUCD insertion are more in comparison to the immediate type because in most of the cases counselling was done in post-Partum period (i.e.45%) so it took some time for the women and their family to take the decision regarding PP IUCD insertion, and hence forth majority have taken the IUCD in the extended Post-Partum period i.e. between 10 minutes to 48 hours Post-Partum.

[Table 4] reveals the Rate of Expulsion of different type of Post-Partum IUCD at 3months.Intra-caesarean type were associated with maximum expulsion rate of 6.5% followed by Immediate Post-Partum type i.e. 6.1% and Extended Post-Partum type had the least Expulsion rate of 3.2% but the difference in Expulsion Rate in different types of PP IUCD is not statistically significant ($p>0.05$). The overall Expulsion Rate of Post-Partum IUCD at 3 months was 5.6%. These findings are consistent with the findings of Morrison et al.1996.99

In our study the rate of expulsion at 3 months and 6 months are lower (i.e. 5.6% & 8.4% respectively) compared to the other studies (Bonilla Rosales F, et al 2006,^[10] & Celen S et al 2004& celen s et al 2011). But in our study the rate of expulsion is more in Immediate Post-Partum group than extended Post-Partum group in contrast to other studies.

[Table 5] depicts the Rate of Expulsion of Post-Partum IUCD in association with Parity at 3 months. Higher Rate of Expulsion i.e. 6.6% were associated with Multi than in Primi in which Rate of Expulsion was 4.1% but the difference is not statistically significant ($p >0.05$). Higher Rate of Expulsion (i.e. 9%) were associated with Multi (Bonilla Rosales F, et al 2006) than in Primi in which Rate of Expulsion

was (i.e.7.7%) but difference is not statistically significant ($p>0.05$).

[Table 6] depicts the Rate of Expulsion of Post-Partum IUCD in association with Presence of Infection at 3 months. The Rate of Expulsion is higher in presence of Infection (i.e. 22.7%) than those without the presence of Infection (i.e. 3.9 %) and the association of rate of Expulsion with infection is statistically significant ($p<0.001$).

[Table 7] depicts the Rate of Missing Strings in association with different type of Post-Partum IUCD at 3 months. Higher Rate of Missing Strings was seen in Intra-caesarean type (i.e. 11.4%) than Immediate Post-Partum type (i.e.10.6%) and a lesser rate is seen with Extended Post-Partum type (i.e.7.9 %) but the difference is not statistically significant ($p>0.05$). At 6 months, Higher Rate of Missing Strings was seen in Intra-caesarean type (i.e. 16.4%) than Immediate Post-Partum type (i.e.15%) and a lesser rate is seen with Extended Post-Partum type (i.e.9.2%) and this difference of missing strings in different PP IUCD is statistically not significant ($p>0.05$) as evident from Table No. 15(b).The overall rate of missing strings is 13.2%.

[Table 8] depicts the Rate of Missing Strings in association with Parity at 3 months. Higher Rate of Missing String was seen in Multi (i.e.11.8%) than in Primi (i.e. 8.2 %) but the difference is not statistically significant ($p>0.05$).Table No.16 (b) depicts the Rate of Missing Strings in association with Parity at 6 months. Higher Rate of Missing Strings was seen in Multi (i.e.17.1%) than in Primi (i.e. 10.1 %) but the difference is not statistically significant ($p>0.05$). Table No.17 reveals Overall Rate of Missing Strings at 3 months and 6 months (i.e.10.4% & 14.3% respectively).

[Table 9] depicts the causes of Removal of Post-Partum IUCD at 3 months. In majority of cases the cause of Removal is bleeding per vaginum i.e. 8 cases (66.7%) followed by White discharge i.e. (8.3%). Table No. 18(b) depicts the causes of Removal of Post-Partum IUCD at 6 months. In majority of cases the cause of Removal is bleeding per vaginum i.e. 25 cases (67.6 %) followed by Pain abdomen i.e. (10.8 %). These findings are consistent with those of Hubacher D, Reyes V, Lillo S, et al (Hum Reprod.2006;21: 1467–1472)44 & Burnhill MS et al (Am J Gynecol Health. 1989;3:6–10).^[12,13,14]

[Table 10] Reveals about the Satisfaction of patient in different type of Post-Partum IUCD at 3 months. It is maximum in Immediate Post-Partum type (i.e.93.9%) followed by Intra-caesarean type (i.e.92.5%). At 6 months, It is maximum in Immediate Post-Partum type (i.e.96.7%) followed by In Extended Post-Partum type(i.e.93.5) as evident from table No.19(b).^[15]

CONCLUSION

The major drawbacks of CuT380 A irregular bleeding per vaginum in the form of menorrhagia or polymenorrhoea and dysmenorrhoea which are the major causes of removal and can be controlled with NSAIDs and tranexamic acid. Both the acceptance and actual insertion of Post-Partum IUCD were low probably because it is a new concept in our community. For these women, the only opportunity to receive information about contraceptives is during childbirth when they are in contact with medical personnel. Hence, it is suggested that family planning should be integrated with maternal and child-care services in order to effectively promote the use of IUCDs.

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