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Original Research Article

Prospective study on outcome of post-partum intrauterine contraceptive device insertion at tertiary level rural health institute of Gujarat, India

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ABSTRACT

Background: This study was conducted to evaluate the acceptance, safety, efficacy, complications and expulsion rate of post-partum intrauterine contraceptive device (PPIUCD) insertion among post-partum pregnant women in a rural tertiary care center. Objective of this study was assessment of the efficacy and safety of post-partum IUCD insertion. Comparing the complications and client satisfaction in both groups (intra caesarean insertion versus vaginal route of insertion).

Methods: This is a prospective study conducted at one of the rural tertiary care teaching institution. A total of 150 patients with caesarean or vaginal deliveries had PPIUCD insertions and they were followed up for a period of one year. The outcome measures analyzed were menstrual irregularities, vaginal discharge, pelvic infection and perforation and efficacy measures - failure, expulsion and removal. Data are expressed in frequency and percentage. Chi square test was used for comparison and P value <0.05 was considered significant.

Results: The study shows that PPIUCD is an effective intervention in both caesarean and vaginal delivery with non-significant differences in safety and efficacy depending on the route of insertion. There was no case of perforation and no significant risk of infection in either caesareans or delivery. Spontaneous expulsion occurred in two cases inserted by vaginal route. Missing string incidence is high in the caesarean group compared to vaginal insertion.

Conclusions: PPIUCD is a safe, effective and long term reversible method of contraception and should be encouraged by public awareness and community acceptance.

Keywords: Intra caesarean, Post placental, Post-partum contraception, Post-partum intra uterine contraceptive device

INTRODUCTION

Family planning is the only way to combat the issue of population explosion. Various methods are available for women to choose in order to avoid unwanted pregnancies. In India, 65% of women have unmet need of family planning in first year of post-partum period.¹ Post partum period is the best opportunity for women as far as insertion of intra uterine contraceptive devices (IUCDs)

are concerned. The use of IUCD is most convenient and safe as it is long acting and reversible and safer method of contraception.² It has been provided by the government health facilities at free of cost. In the era of increasing institutional deliveries, the only thing requires is to motivate the women for post partum insertion of IUCD. Women should be counselled during antenatal period, at the time of admission, during early labour and for those having planned caesarean section regarding acceptance of

post-partum insertion of IUCD. The post-partum IUCD can be inserted immediate post partum (within 10 minutes after expulsion of placenta), intra caesarean or within 48 hours of delivery prior to discharge from the health facility.¹ Present study was conducted in the rural area of the Gujarat, India, where limited research is available on safety and efficacy of post partum IUCD inserted in both vaginal and caesarean deliveries.

METHODS

A hospital based prospective study was conducted at one of the rural teaching tertiary care institutes of Gujarat, India between January to December 2017 duration. Purposive sampling method was used for selecting the study population. Total 150 females were included in the study by purposive sampling. Inclusion Criteria for the study were: Parturient between age 14 to 44 years, having hemoglobin level more than 8 gm/dl and who are willing to go for IUCD insertion were included in the study. Females having any kind of systemic illness and obstetric complications were excluded from the study. Counseling regarding insertion of IUCD was done in antenatal, intra partum and post partum period.

Prior consent was received from all the study participants for insertion of IUCD. Preformed questionnaire having general socio demographic and obstetric details were used for the study. All the women were followed up at 6 week, 6 month and 12 months. Complications felt by the participants were recorded in each visit. Out of 150 females, 138 were followed up at the end of 1 year of insertion. Rests of the females were lost to follow up. Client satisfaction was measured at the end of one year.

RESULTS

Present study was conducted among 150 females who have undergone post-partum insertion of IUCD. Majority (75.3%) were from age group 20 to 30 years. Majority (61.3%) of the beneficiaries had educational status of secondary and higher secondary level. Women from middle Socio economic class constituted 63.4% of total. Women from rural background (76.7%) and Hindu religion (83.3%) were predominated (Table 1).

It was observed that 64.7% females were multipara. Term delivery constituted 78.7% of total deliveries. Almost equal proportions of females were counselled during antenatal period (43.3%) and at the time of early labour (46.7%) (Table 2). Caesarean deliveries outnumbered (59.3%) the vaginal deliveries (40.6%). The time of insertion of IUD was post placental (30.6%) and Intra caesarean (59.3%). Insertion within 48 hours of delivery was found in 10% of cases.

No significant difference was found between parity and route of insertion (Table 3). More number of primipara females (69.8%) had undergone intra caesarean route of insertion.

Table 1: Socio demographic profile of acceptors of post-partum intra uterine devices.

Socio demographic variable	Frequency (N=150)	%
Age (Years)		
<19	3	2.0
20-25	59	39.3
26-30	54	36.0
31-35	31	20.7
>35	3	2.0
Educational status		
Illiterate	7	4.7
Primary	25	16.7
Secondary	47	31.3
Higher secondary	45	30.0
Graduate and above	26	17.3
Socio economic status		
Lower	35	23.3
Middle	95	63.4
High	20	13.3
Residence		
Rural	115	76.7
Urban	35	23.3
Religion		
Hindu	125	83.3
Christian	9	6.0
Muslim	16	10.7

Table 2: Obstetric profile of study group (n=150).

Obstetric profile	Frequency	%
Parity		
Primi para	53	35.3
Multi Para	97	64.7
Gestational age		
Term	118	78.7
Preterm	32	21.3
Time of counseling		
Antenatal	65	43.3
Early labour	70	46.7
Postnatal	15	10.0
Mode of delivery		
Caesarean	89	59.3
Vaginal	61	40.7
Route of insertion		
Post placental (Within 10 mins)	46	30.6
Post-partum (Within 48 hours)	15	10.0
Intra caesarean	89	59.3

Follow up sessions were conducted at the end of 6 week, 6 and 12 months. It was noticed that menstrual irregularities were found among 0, 20 and 23 females at the end of 6 week, 6 and 12 months, respectively. Vaginal discharge was seen among 18 and 12 females at 6 and 12 months, respectively. Most common complication was mission string. Females who could not

feel the string at the end of 1 year were 40 (Table 4). Comparison between route of insertion and incidence of missing string were carried out. It was found that among those who missed the string, 30.3% were having intra-caesarean route of insertion, however the difference was not significant (Table 5). Out of 150, 138 females were followed up at the end of 1 year.

Client satisfaction was compared among both the groups (Caesarean versus Vaginal route). It was found that 76.7% of females from vaginal route insertion were satisfied to some or more extent, where as 61.6% from caesarean route were satisfied. No significance difference was found for these components (Table 6).

Table 3: Comparison of parity and route of insertion.

Parity	During caesarean (n=89)		Vaginal (n=61)		Total
	Frequency	Percentages*	Frequency	Percentages*	
Primi	37	69.8	16	30.2	53
Multi	52	53.6	45	46.3	97

Row wise percentage; Chi square= 3.0, p value=0.07

Table 4: Complications at follow up sessions (6 weeks, 6 and 12 months).

Complications	6 weeks	6 months	12 months
Menstrual irregularities	0	20	23
Menorrhagia	0	8	5
Fever	2	0	0
Vaginal discharge	2	5	3
Expulsion	2	0	0
Missing string	45	40	40
Perforation	0	0	0
Failure	0	0	1
Removal	0	8	3

Table 5: Comparison of missing string at one year follow up and route of insertion*.

Missing string	Caesarean	Vaginal	Total
Yes	27 (30.3%)	13 (21.3%)	40 (36%)
No	62 (69.6%)	48 (78.6%)	110 (64%)
Total	89	61	150

*figures in the parenthesis are row wise percentage; (Chi square value: 2.3, p value: 0.12)

Table 6: Client satisfaction and route of insertion at the end of one year*.

Client Satisfaction	Route of insertion		Total
	Caesarean (89)	Vaginal (61)	
Not satisfied	3 (3.8%)	2 (3.4%)	5
Satisfied	38 (48.7%)	40 (66.7%)	78
Very satisfied	10 (12.9%)	6 (10.0%)	16
Uncertain	27 (34.6%)	12 (20.0%)	39
Total	78	60	138

*figures in the parenthesis reveal column wise percentages, (Chi square value: 2.6, p value: 0.44).

DISCUSSION

A prospective study was conducted at one of the rural tertiary care teaching institutes of Gujarat, India. Total 150 post-partum IUD users were included in the study. Majority of accepters of PPIUD (75.3%) were from age group 20 to 30 years. Primipara consisted 35.5% whereas 64.7% females were multipara.

In the study conducted by Shukla et al, there were 31.6% of primipara and 68.3% of multipara women who underwent PPIUD insertion.³ Similar, finding having number of multiparous clients (65.1%) was seen in the study by Grimes et al.⁴ In present study the time of insertion of IUD was post placental (30.6%) and Intra caesarean (59.3%). Insertion within 48 hours of delivery was found in 10% of cases. In the study conducted by

Shukla et al, 63% IUD insertion was made during caesarean section and 37% had it at the time of vaginal delivery.³ Kumar S et al, revealed in their study that among all post-partum insertion, 51% women had immediate insertion following vaginal delivery, 11% had intra caesarean section insertion and 11% had underwent IUD insertion within 48 hours of delivery.⁵

Present study conducted follow up sessions at 6 week, 6 and 12 months. It was noticed that menstrual irregularities were found among 0, 20 and 23 females at the end of 6 week, 6 and 12 months, respectively. Vaginal discharge was felt by 2, 5 and 3 females at 6week, 6 and 12 months, respectively. None of them complained of abdominal pain during any of the follow up visits. In study carried out by Jani PS, abdominal pain was the major complication of PPIUCD followed by bleeding problem.⁶

Shukla et al, reveal that no women complained of pain in lower abdomen or signs of pelvic infection at 6 week follow up.³ Kumar S et al, mentioned that 8.9% had abdominal pain and 5.5% at menstrual problem after insertion of IUD at 6 week.⁵ Nayak et al⁷ mention in their study that, 2027 clients who were followed up at 6 weeks, 12.13% had irregular bleeding, 5.08% had abdominal pain, 4.83% had missed strings, and 2.86% had infection. Most common problem was missing string in present study. Number of females (out of 138) who could not feel the string at the end of 1 year was 40. Shukla et al, mentioned that 11.2% did not feel thread at 6 week follow up.³

In present study, expulsion of IUCD occurred in only 2 females (both inserted IUD during vaginal delivery) at 6 week follow up. Study by Tripathi U et al, showed an expulsion rate of 10% in caesarean sections and 13.5% in vaginal deliveries.⁸ In another study expulsion rate of 6.1 percentages was recorded.

In a study carried out by Hooda et al, nine cases out of one hundred seventy-one had expulsion.^{3,9} In their study higher expulsion was there in vaginal delivery as compared to caesarean section.

Kumar S et al, mentioned 3.6% of expulsions were come across at 6 week follow up.⁵ In one study by Bhalerao, who conducted research among 168 women noted 16.5% of expulsion.¹⁰ No case of perforation or misplaced IUCD was there in present study. Finding was similar in the study carried out by Shukla et al.³

Only one case of unwanted pregnancy was noted in present study with Cu T in situ. Similar finding were noted in a study conducted by Thonneau PF.¹¹ In a study carried out by Singal S et al, two cases of unintended pregnancy with Copper T in situ were reported.¹² Level of satisfaction among females regarding PPIUD showed that 76.7% of females from vaginal route insertion and 61.6% from caesarean route were satisfied. In the study

by Kumar S et al 92% females were satisfied with their choice of selecting PPIUD.⁵

CONCLUSION

PPIUCD is a safe, effective and long term reversible method of contraception and should be encouraged by public awareness. Counselling should be done during each antenatal visit as well as at the time of admission to labor room for improving the client's acceptance.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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