

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20242290>

Original Research Article

A prospective study of postpartum insertions of intrauterine contraceptive device in a tertiary care hospital

Priya Kumar, Chaitanya Indrani, Karunya Nagaraju*,
Dharmavijaya Mathigatta Narayanappa

Department of Obstetrics and Gynecology, MVJ Medical College and Research Hospital, Bangalore, Karnataka, India

Received: 13 July 2024

Revised: 12 August 2024

Accepted: 13 August 2024

*Correspondence:

Dr. Karunya Nagaraju,

E-mail: karu1695@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: We are facing a major challenge due to unmet need for contraception in the postpartum period. In spite of many available contraceptives numerous unplanned pregnancies occur. Though the couples desire contraception, they are not able to accept it due to their ignorance and misconception. Postpartum IUCD insertion is an effective way to counter this. This study was planned to build up data for acceptance, safety and to identify the reasons for non-acceptance and follow up of postpartum IUCD insertions and the challenges faced.

Methods: The present study is a prospective study which was conducted in MVJMC&RH over a period of 1 year which included 397 participants and they were followed up for a period of 6 months at two intervals. Reasons for acceptance and refusal of PPIUCD was recorded, and all issues were addressed along with routine postnatal care.

Results: In the study period of one year there were total of 397 deliveries and 235 insertions. Out of them acceptance rate was 59.19%. Follow up was done at 6 weeks and 6 months. A follow up of 66.8% at 6 weeks and 51.9% at 6 months was noted. Expulsion rates were 2.9% at 6 weeks and 1.7% at 6 months follow up.

Conclusions: This study shows that a steadfast commitment to postpartum contraception by health care providers and the government will unquestionably lessen incidence of unintended pregnancies and the accompanying burden which is a need of the hour to our booming nation.

Keywords: Contraception, PPIUCD, Post partum insertion, Postplacental insertion, Long term contraception

INTRODUCTION

India has been experiencing exponential growth in population in recent decades, mainly driven by progress in the socio-economic and medical fields. In India, 65% of women have an unmet need for family planning in their first year of postpartum period, but only 26% of women are adopting any method of family planning during this crucial time.¹ Recommended spacing between birth to next pregnancy is at least 24 months and between abortion to next pregnancy is at least six months.² The negative impact of unintended pregnancies on our national health care program is significant. Pregnancy before 24 months of previous birth has complications such as anemia, abortion,

preterm labor, PROM, PPH, low birth weight baby, maternal morbidity and mortality. So during this postnatal period women must be offered any form of reversible contraceptive.^{3,4} The modern day advent of contraceptives has basket of choice for immediate postpartum contraception like Cu IUCD, LNG IUS, implants, progesterone only pills, centchroman, barriers and emergency contraception, of these, IUCD is a highly recommended method of contraception due to its safety, efficacy, rapidly reversible, and long-acting contraceptive method with relatively few side effects.⁵ Also, women are highly motivated during the postpartum period and have minimal need for additional hospital visits.⁶ The choice for postpartum contraception including the PPIUCD should

ideally be offered to women during pregnancy. As per the National Family Health Program, IUCD services are offered free of cost at all government facilities. The increased institutional deliveries are an added opportunity to provide women easy access to immediate PPIUCD services.

The primary objective of this study was to determine the factors associated with acceptance, safety, identify the reason for non-acceptance. Secondary objectives were to determine the factors associated with discontinuation and to quantify the rates of adverse events.

METHODS

This prospective observational study was conducted in the MVJ Medical College and Research Hospital, Bangalore. This study conducted for 1 year from August 2022 - August 2023. Total 397 patients with PPIUCD insertions were included.

Selection criteria

All women who are considered as low risk pregnancy attending antenatal clinic, women reporting in early labour who has missed counselling in antenatal period.

Inclusion criteria

All women who are considered as low risk pregnancy attending antenatal clinic, insertion time was restricted to immediately following vaginal birth, intra-caesarean or within 48 hours of vaginal birth, women reporting in early labour who has missed counselling in antenatal period were included.

Exclusion criteria

Women reporting in active labour who had missed counselling in antenatal period, women with known severe medical disorder in pregnancy, women with uterine anomaly, women with persistent vaginal bleeding following delivery, women with PROM more than 18 hours, fever or obvious signs of intrapartum or postpartum sepsis were excluded.

Procedure

After a detailed counselling session and written informed consents PPIUCD was inserted by residents and consultants of OBG department under aseptic precautions as per the inclusion criteria for 397 patients and followed up at intervals of 6 weeks and 6 months. The study was approved by the Institutional Ethics Committee of each hospital.

RESULTS

In the study period of one year total of 397 women were recruited. There were 252 (63.47%) vaginal births and 145

(36.52%) caesarean sections. The total number of PPIUCD insertions were 235 (59.2%), 141 (60%) insertions post vaginal delivery and 94 (40%) insertions post caesarean section (Table 1).

Table 1: Percentage of deliveries covered including mode of delivery.

Deliveries	Total	PPIUCD accepted and inserted	Percent covered
Vaginal	252	141	55.9
Cesarean	145	94	64.9
Overall	397	235	59.2

Table 2: Association between the awareness and acceptance of PPIUCD.

PPIUCD awareness	PPIUCD acceptance		Total	P value
	Yes	No		
Yes	218	129	347	<0.001
No	17	33	50	
Total	235	162	397	

Out of the total deliveries, 347 (87.40%) women were aware about PPIUCD, out of them 218 (62.82%) accepted PPIUCD and all underwent insertion. Out of 50 (12.59%) women who were unaware of PPIUCD, only 17 (34%) accepted PPIUCD insertion. The rate of acceptance of PPIUCD insertion who were already aware about the method was statistically significant ($p < 0.001$) (Table 2). When the women's knowledge on PPIUCD was evaluated, it was overwhelming to note that in the number of aware women, health care providers/health centre were the source of information for 62.7% of women, 24.6% of women were self-informed through different media and yet other 12.7% were through undetermined means.

In the present study overall acceptance for PPIUCD insertion was 59.19%, out of which 55.95 % were vaginal deliveries and 64.82 % were caesarean. The main reason for acceptance was awareness about its reversibility (57.4%) followed by awareness about its safety and efficacy (51.9%). The main reason for non-acceptance was fear of complications (60.5%) followed by refusal from partner and family (54.9%) and acceptance of alternate method (49.4%) (Table 3).

Acceptance level was influenced by other demographic factors like age, educational status, residence, religion, socioeconomic status, parity and desire for future pregnancy. In the present study, the highest acceptance was seen in women in the age group ranging from 21-30 years (43.4%), those having primary level of education (41.3%), women coming from rural areas (62.1%), Hindus (44.7%) and those with lower socioeconomic status (41.7%). A higher acceptance rate was observed among primipara (48.1%) and those who were desirous of future

pregnancy after an interval of more than 2 years (70.7%) (Table 4).

Table 3: Factors affecting acceptance and refusal of PPIUCD.

Factor	No. of patients	Percent
Factors affecting acceptance of PPIUCD		
Reversible	135	57.4
Safe and effective	122	51.9
Allowed by partner/family member	100	42.6
Long life	50	21.3
Previous use of IUCD	36	15.3
Non-hormonal	12	5.1
No interference with sex	17	7.2
Factors affecting refusal of PPIUCD		
Partner and family refusal	89	54.9
Fear of complications	98	60.5
Satisfied with previous method	33	20.3
Want to use another method	80	49.4
Not ready yet/no reason	20	12.4

Follow up of all the women with insertions were done at 6 weeks and 6 months. A total of 157 (66.8%) women showed up for follow up after 6 weeks and at the end of 6 months 122 (51.95%) women came for follow up. Out of these 66.2% of women who came for scheduled follow up at 1 month had no complaints, and 71.31 % of women who visited at 6 months had no complaints. The incidence of expulsion at 6 weeks was found in 7 women, this was 2.9% of total insertions and becomes 4.5% of those who were followed. Expulsions in 6 months was 1.7% of total insertions and becomes 3.2% of those who were followed up. About 57.14% of women opted for reinsertion after the first follow up. At the six months follow up out of 4 expulsions no cases opted for reinsertion.

Removal of IUCD at 6 weeks of follow up was done in 10 women, 4.2% of total insertions and 6.4% of those who were followed up. At 6 months follow up, 12 women got the IUCD removed, 5.1% of total insertions and 9.9% of those who were followed up.

The other common problem of threads not seen on follow up at 6 weeks was found in 19 women (8% of all insertions

and 12.1% of those who followed up, out of whom in 17 cases USG could pick up the IUCD insitu (89.47%), this was in 7.24% of all insertions. Of the remaining 2 cases where USG could not find the device, 1 woman opted for reinsertion. At 6 months follow up, 10 women were identified as threads not seen, 4.25% of all insertions and 8.19% of those who were followed up.

The incidence of local infection (pelvic/endometritis /cervicitis) was found in 2 cases (0.85%) at 6 weeks and 3 cases (1.27%) at 6 months. Presence of pelvic pain with or without signs of infection was documented in 5 cases (2.12%) at 6 weeks and in 1 case (0.42%) at 6 months. Follow up at 6 weeks and 6 months showed an expulsion rate of 4.5% and 3.2%, removal rate at 6 weeks was 6.4% and at 6 months was 9.9% (Table 5).

Table 4: Baseline socio demographic profile of women with acceptability of PPIUCD.

Variable		No of patients	Percent
Age	<20	88	37.4
	21-30	102	43.4
	>30	45	19.1
Educational status	None	24	10.2
	Primary	97	41.3
	Secondary	73	31.0
	Higher	41	17.4
Residence	Rural	146	62.1
	Urban	89	37.9
Religion	Hindu	105	44.7
	Muslim	96	40.9
	Others	34	14.5
Socioeconomic status	Upper	21	9.0
	Upper middle	31	13.2
	Lower middle	85	36.2
	Lower	98	41.7
Parity	P1	113	48.1
	P2-p4	97	41.3
	>p4	25	10.6
Desire for future pregnancy	2 years	166	70.7
	Not sure	46	19.6
	No more	23	9.9

Table 5: Follow up of PPIUCD insertions up to 6 months.

Findings	6 weeks number	Percent	6 months number	Percent
Follow up/total number	157/235	66.8	122/235 122/157	51.9/77.7
No complications	104	66.2	87	37
Long thread trimmed	6	2.5/3.8	3	1.3/2.5
Bleeding	4	1.7/2.5	2	0.85/1.63
Expulsion	7	2.9/4.5	4	1.7/3.2

Continued.

Findings	6 weeks number	Percent	6 months number	Percent
Removal	10	4.2/6.4	12	5.1/9.9
Thread not seen	19	8/12.1	10	4.2/8.2
IUCD insitu on USG	17/19 17/235	89.4/7.2	10	100
Local infection	2	0.85/1.3	3	1.2/2.4
Pain	5	2.1/3.2	1	0.4/0.8
Post expulsion reinsertion	4/19	21	None	

DISCUSSION

Contraception and the knowledge about different methods of contraception is an important aspect in the reproductive life of a women. Postpartum period is one such important phase of their lives. IUCD is one of the good, acceptable and a very effective method of contraception.⁷ The current study was conducted to find out the awareness, acceptance, insertion and follow up of postpartum insertions of IUCD. In our present study, out of 397 women recruited in the study 347 women (87.40%) were aware of the method, but out of them 218 women (62.82%) accepted. This is an improvement among the previous studies, one of them showing 51.78% of awareness as shown by Gudi et al and 20.20% as shown by Sharma.^{8,9} These findings suggest that there is an increase in level of awareness among women on the concept of contraception and PPIUCD, in order to increase it further more emphasis has to be given on antenatal counselling.

In our study the overall coverage of PPIUCD was 59.2%, this was almost double the coverage 36.25% in study done by Gudi et al.⁸

In the present study, the highest acceptance was seen in women in the age group ranging from 21-30 years (43.4%), those having primary or secondary level of education (41.3% and 31.0%), women coming from rural areas (62.1%), Hindus (44.7%) and those with lower socioeconomic status (41.7%). A higher acceptance rate was observed among primipara (48.1%), and those who were desirous of future pregnancy after an interval of more than 2 years (70.7%). These findings are similar to study conducted by Gudi et al and Deshpande et al and Gujju et al.^{8,10,11} except two variables, in our study highest acceptance rate was seen among rural women and those belonging to lower socioeconomic class in contrast to urban women and women belonging to middle class in other studies. This could be because our centre of study was located in a rural area.

There were different factors influencing the decision of acceptance of PPIUCD, we found that reversibility of the method mattered in 57.4% of acceptors as an influencing factor, safety and effectiveness in 51.9% and acceptance by partner/family member in 42.6% of acceptors, which were similar to findings of studies conducted by Gudi et al and Mishra et al.^{8,12}

The factors influencing the reason for refusal of PPIUCD were fear of complications in 60.5%, refusal from partner or family member was seen in 54.9% and 49.4% of women wanted to use another method. The reasons for refusal were similar to as was found by Gudi et al except refusal from partners or family member which was highest in our study.⁸ In order to overcome this, healthcare providers should emphasize more on couple counselling and involving family members in counselling sessions.

The follow up data in our study are encouraging. A follow up of 66.8% at 6 weeks and 51.9% at 6 months was noted. Expulsion rates were 2.9% at 6 weeks and 1.7% at 6 months follow up, removal request was made by 4.2% at 6 weeks, which was comparable to Gudi et al and 5.1% at 6 months follow up and the reason given was abnormal bleeding, which was in contrast to the study conducted by Gudi et al where only 0.84% requested for removal.⁸

The issue of thread management following PPIUCD insertions, in which threads were found to be missing in 8% of insertions, where in large majority of them (89.4%) USG could pick up the IUCD insitu. The incidence of other problems like local infection and pain were rare and accounted for only 1.2% and 0.4%, respectively at 6 months follow up, indicating an incidental finding rather than method related.

The present study had several limitations. The study was conducted in rural area and in single centre, which limited universality of our results and the follow up may have introduced recall bias.

CONCLUSION

The present study examined the factors associated with acceptability and refusal of PPIUCD. In order to increase the acceptance of PPIUCD, key importance should be given to spreading awareness among women and their family members, integration of a PPIUCD counselling service at the antenatal clinic, with involvement of partner will contribute to the success. The government needs to develop strategies to increase public awareness of the PPIUCD. As care providers for women during their pregnancy, birthing and postpartum phase, we need to be intensely aware that postpartum period is a crucial time when couples are highly motivated and receptive to family planning methods. It is also important to arrange 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. Cash incentives to the acceptor, motivator and provider would bring about a substantial progress in the PPIUCD use in developing countries like India. Skill enhancement of healthcare personnel for insertion techniques, adequate antenatal counselling and advocacy of PPIUCD can help increase the acceptance of PPIUCD. This study shows that a steadfast commitment to postpartum contraception by health care providers and the government will unquestionably lessen incidence of unintended pregnancies and the accompanying burden which is a need of the hour to our booming nation.

Funding: No funding sources

Conflict of interest: None declared

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

REFERENCES

1. Family Planning Division, Ministry of Health and Family Welfare, Govt. of India. Postpartum IUCD Reference Manual for Medical Officers and Nursing Personnel, 2013. Available at: https://nhm.gov.in/images/pdf/programmes/family-planing/guidelines/IUCD_Reference_Manual_for_MOs_and_Nursing_Personne_Final-Sept_2013.pdf. Accessed 6th December 2022.
2. World Health Organization. Report of a WHO Technical Consultation on Birth Spacing, 2007. Available at: <https://apps.who.int/iris/handle/10665/69855>. Accessed 6th December 2022.
3. World Health Organization. Programming Strategies for Postpartum Family Planning, 2013. Available at: <https://www.who.int/publications/i/item/9789241506496>. Accessed 6th December 2022.
4. Hounton S, Winfrey W, Barros AJ, Askew I. Patterns and trends of postpartum family planning in Ethiopia, Malawi, and Nigeria: Evidence of missed opportunities for integration. *Glob Heal Action*. 2015;8:29738.
5. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-5), 2019-21, India: Volume I, 2021. Available at: <http://www.rchiips.org/nfhs> or <http://www.iipsindia.ac.in>. Accessed 6th December 2022.
6. Iftikhar PM, Shaheen N, Arora E. Efficacy and satisfaction rate in postpartum intrauterine contraceptive device insertion: A prospective study. *Cureus*. 2019;11(9):e5646.
7. Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. *The Lancet*. 2006;368(9549):1810-27.
8. Gudi SN, Sachdeva J, Manchanda R, Mani M, Sinha SR, Sinha S, Shivkumar P, et al. A prospective multi-centric study of acceptance, insertion and follow-up of postpartum insertions of IUCD. *J Obstetr Gynecol India*. 2023;73(3):254-61.
9. Sharma A, Gupta V. A study of awareness and factors affecting acceptance of PPIUCD in South-East Rajasthan. *Int J Community Med Public Heal*. 2017;4(8):2706-10.
10. Deshpande S, Gadappa S, Yelikar K, Wanjare N, Andurkar S. Awareness, acceptability and clinical outcome of post-placental insertion of intrauterine contraceptive device in Marathwada region, India. *Indian J Obstetr Gynecol Res*. 2017;4(1):77-82.
11. Gujju RL, Prasad U, Prasad U. Study on the acceptance, complications and continuation rate of post-partum family planning using the post placental intrauterine contraceptive device among women delivering at a tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol*. 2015;4(2):388-92.
12. Mishra S. Evaluation of safety, efficacy, and expulsion of post-placental and intra-cesarean insertion of intrauterine contraceptive devices (PPIUCD). *J Obstetr Gynecol India*. 2014;64:337-43.
13. Nelson A. Intrauterine contraceptive. *J Obstet Gynecol*. 2008;6:219-24.

Cite this article as: Kumar P, Indrani C, Nagaraju K, Narayanappa DM. A prospective study of postpartum insertions of intrauterine contraceptive device in a tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol* 2024;13:2281-5.