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Original Research Article

Acceptability, safety, and clinical outcomes of postpartum intrauterine contraceptive device insertion: a prospective study at a tertiary care hospital

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ABSTRACT

Background: Contraception is vital in improving the quality of life of women and reducing the maternal mortality and morbidity, occurring due to unplanned pregnancy. During the immediate post-delivery period, women are highly motivated and need an effective method of contraception. The benefits of the postpartum intrauterine contraceptive device (PPIUCD) have to be emphasized to the women
Methods: The present study was conducted in the department of obstetrics and gynecology, JSS hospital, Mysore, from June 2021 to June 2024, spanning a period of 3 years. After counseling and consent, Copper T 380A was inserted after delivery. Acceptability, safety, and clinical outcome were studied.
Results: Among a total of 14196 deliveries at JSS hospital during the study period, 3107 PPIUCDs were inserted (21.88%). The 2522 among 6258 antenatally counselled women accepted PPIUCD insertion (40.3%), and 2450 (97.14%) got PPIUCD inserted. The 585 (11.68%) out of 5006 women counseled on admission for delivery had PPIUCD inserted. The most common reason for denial of PPIUCD was a family member's objection, followed by the concern about side effects. The 718 (23.10%) women reported complications like excessive bleeding, white discharge per vagina, abdominal pain, and only 2 (0.075%) had spontaneous expulsion of PPIUCD.
Conclusions: PPIUCD appears to be a safe and effective method of contraception. All the institutions providing health care to women need to be trained in the correct insertion technique of PPIUCD, counselling of women and family members, to propagate this novel method of contraception, and to motivate the women for continuation of IUCD by providing effective follow-up service.

Keywords: PPIUCD, Acceptability of PPIUCD, Postpartum Contraception

INTRODUCTION

India, being the most populous country in the world with a population of 1.4 billion, plays a significant role in ensuring the success of the world in eliminating unmet needs of contraception.[1] Though the unmet need for family planning in India saw a decline from 20.6% in 1993 to 9.4% in 2021, there is still a need for educating women about the usage of safe and effective methods of contraception.[2] Studies have found that conceiving within two years of childbirth leads to adverse events like abortion, premature labour, postpartum haemorrhage, low birth weight babies, and sometimes maternal death.[3] Contraception is vital in improving the quality of life of women and reducing the maternal mortality and morbidity, occurring due to unplanned pregnancy. During the immediate post-delivery period, women are highly motivated and need an effective method of contraception. Though the cafeteria approach of contraceptive advice with various options like oral contraceptive pills,

injectable contraceptives, barrier methods are given, women should be stressed on the additional benefits of PPIUCD. PPIUCD is considered the best mode of contraception because of its safety and effectiveness profile compared to the other methods, and women won't need additional hospital visits for copper T insertion in the postpartum period. Even though the government offers intrauterine contraceptive device (IUCD) services free of cost, and IUCD is one of the most effective, reversible, and safe contraceptive methods, it remains largely underutilized in our country.[4] The use of IUCD is discouraged by worries about its negative effects, concerns of the potential infection, and the infertility it may cause.[5] Hence, sensitization of women and their family members during the antenatal period, along with adequate counseling in the postpartum period, plays a crucial role in improving the acceptance rate of PPIUCD.

METHODS

The present study aimed to determine the acceptability, safety, and complications associated with PPIUCD.The study was carried out in the department of obstetrics and gynecology, JSS Hospital, Mysore, from June 2021 to May 2024 over a period of 3 years.

Pregnant women attending the antenatal clinic and who were willing for delivery at JSS hospital, Mysuru, and also unbooked pregnant women who came for delivery during the study period were counselled for PPIUCD (Copper T 380A) insertion. Pregnant women who satisfied the WHO MEC criteria and gave valid consent were included in the study.[6] Women after 48 hours of delivery and less than 6 weeks of delivery, history of prolonged rupture of the membrane for more than 18 hours, women with postpartum hemorrhage, high-risk factors like diabetes, heart disease, and current pelvic inflammatory disease/sexually transmitted disease/tuberculosis, uterine fibroid with distorted uterine cavity, women with suspicious vaginal bleeding, immediate post-septic abortion, cervical/ endometrial cancer were excluded from the study. Acceptability, insertion, expulsion rate, and complications of PPIUCD were studied, and descriptive statistical analysis was done.

Technique of insertion of IUCD

Post placental IUCD insertion was done by using Kelly forceps following normal vaginal delivery. After removing the placenta, vaginal toileting and removal of clots are done. Under aseptic precautions IUCD is held with the Kelly forceps and is inserted up to the fundus of the uterus, and the IUCD is released. During a cesarean section, IUCD is introduced through the uterine incision and placed at the uterine fundus after the placenta is removed. This is done manually or using regular ring forceps. It is important not to attempt to pass the strings of the IUCD through the cervical os before closure of the uterus, as this will displace the IUCD and leave it lower down in the uterine cavity. There is no need to fix the IUCD with a ligature. The IUCD is inserted within 48 hours following the birth of the baby. The trained provider can insert the IUCD in a procedure or examination room in the postpartum ward, even with regular ring forceps.

All the patients were called for follow-up after 6 weeks to know about the complications, check the Copper T thread, and reassure the patients.

RESULTS

There was a total of 14196 deliveries at JSS hospital during the study period. A total of 3107 copper T insertions were done with an insertion rate of 21.88%. A total of 6258 pregnant women attending the antenatal clinic were counseled for contraception. Among these, 2522 women accepted for PPIUCD insertion (40.3%) during the antenatal period. A total of 2450 (97.14%) antenatally counseled women had the copper T insertion, and the other 72 (2.85%) patients were deferred PPIUCD due to labour complications or withdrew consent. The 585 (11.68%) out of 5006 women counseled on admission for delivery or postnatally had the copper T insertion, and 238 women were not counseled as they had postpartum complications, as shown in Figure 1. A total of 2642 (85%) patients were followed up after PPIUCD insertion at 6 weeks postpartum in the outpatient department or by telephonic interview.

Among the 2450 antenatally counselled women who underwent PPIUCD insertion, 1200 (49%) had the IUCD inserted immediately post-placental, 343 (14%) women had it inserted within 48 hours of delivery, and 907 (37%) had intra cesarean insertion as shown in Figure 2. Among the 585 women counselled during admission for delivery who underwent PPIUCD insertion, 304 (52%) had the IUCD inserted immediately post placental, 88(15%) women had it inserted within 48 hours of delivery, and 193 (33%) had intra-cesarean insertion as shown in Figure 3.

Among the 14,196 deliveries, 8854 were primigravida and 5342 were multigravida. A total of 2120 (23.94%) primigravida underwent PPIUCD insertion, and 987 (18.47%) multigravidas underwent PPIUCD insertion among the counselled pregnant women, as shown in Table 1. Among the total of 3107 women who got PPIUCD inserted, 377 (12.1%) were less than 21 years, 1528 (49.2%) were between 21-25 years, 842 (27.1%) were between 26-29 years, and 360 (11.6%) were more than 30 years, as shown in Table 2.

Among the women who did not accept PPIUCD insertion, the most common reason was family member objection or husband objection in both antenatally counselled 1394 (37.31%) and those counselled on admission 1691 (38.24%). This was followed by the concern about side effects 1012 (27.08%) in antenatally counselled and 1043 (23.59%) in counselled on admission women. Other reasons for denial were opted for interval sterilization in 515 (13.78%) antenatally counselled and 512 (11.58%) counselled on admission women, decided on another

method in 388 (10.38%) antenatally counselled and 676 (15.29%) counselled on admission women. The 427 (11.42%) antenatally counselled and 499 (11.28%) counselled on admission women refused due to religious beliefs and other reasons as shown in Table 3.

A total of 2642 (85%) women with PPIUCD insertion were followed up with 1745 women attending the clinic and 897 telephonic follow-up after 6 weeks, and more frequently if complications occurred. The 718 (23.10%) women out of 3107 PPIUCD inserted women reported complications. Among the complications, 528 (19.9%) women had excessive bleeding, 132 (4.99%) had white discharge per vagina, 56 (2.11%) had abdominal pain, and only 2 (0.075%) had spontaneous expulsion of PPIUCD, as shown in Table 4. The complications were treated on an outpatient basis in all patients. Among these 159 (6.01%) of women wanted copper T removal, and all were counselled in the follow-up period and continued with copper T.

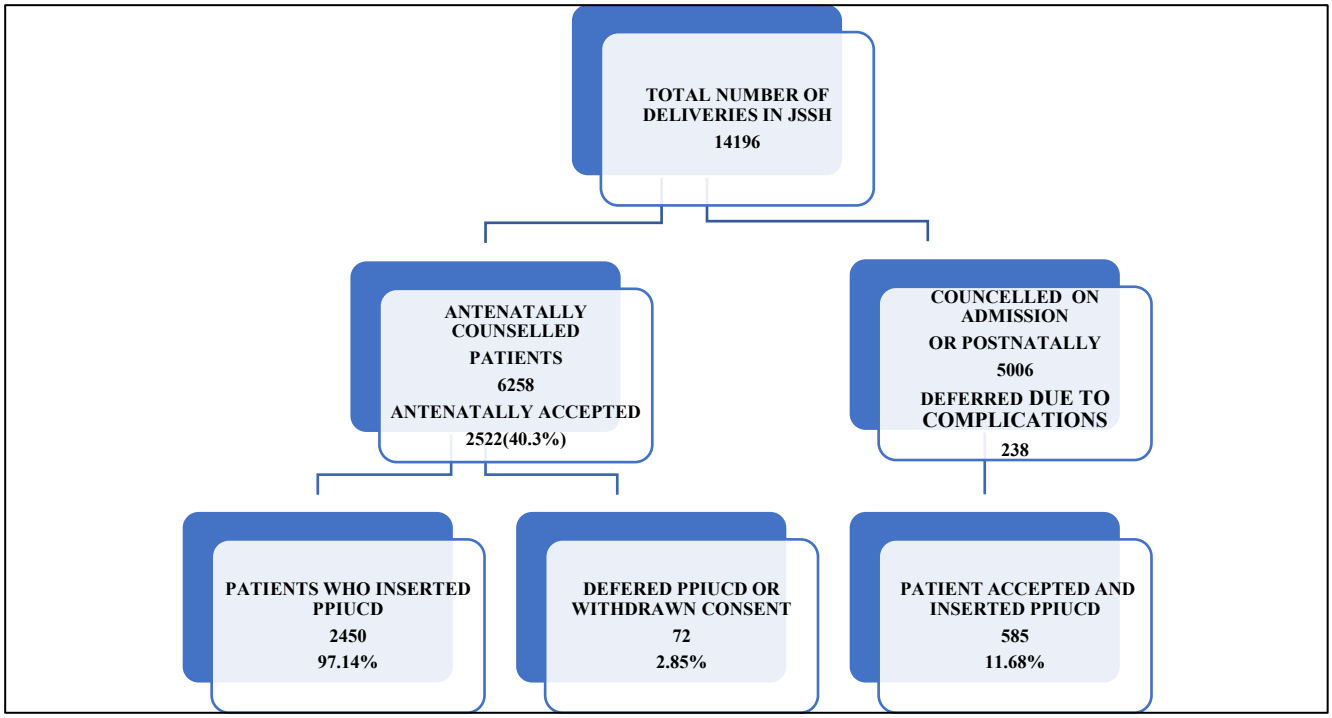

Figure 1: Number of women accepting and inserting PPIUCD.

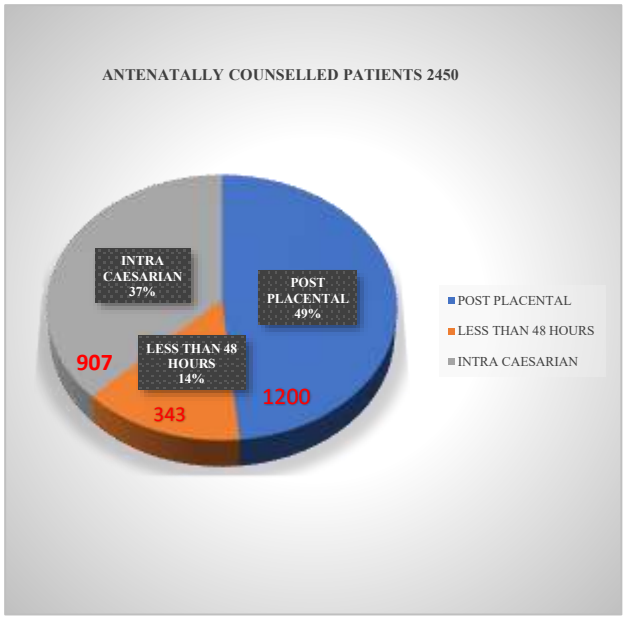

Figure 2: PPIUCD insertion in antenatally counselled women.

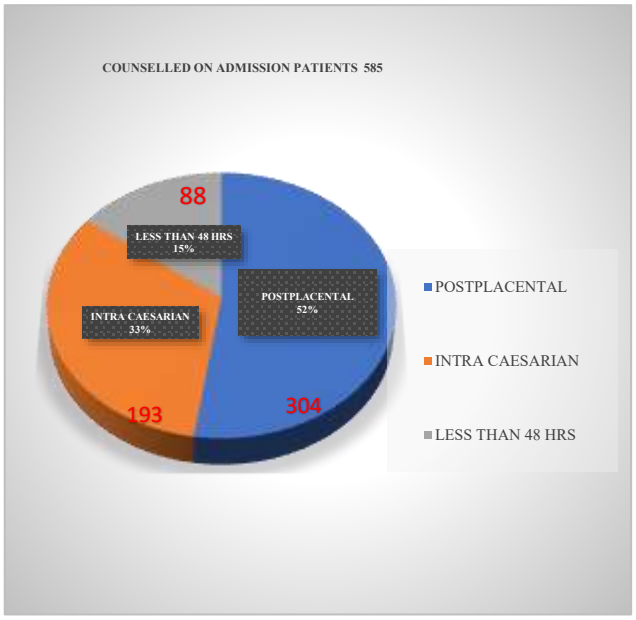

Figure 3: PPIUCD insertion in women counselled on admission.

Table 1: Parity of women undergoing PPIUCD insertion.

Parity	No. of women	No. of women got PPIUCD inserted, (n=3107)
Primigravida	8854	2120 (23.94%)
Multigravida	5342	987 (18.47%)

Table 2: Age group of women undergoing PPIUCD insertion.

Age (in years)	No. of women got PPIUCD inserted	% of women got PPIUCD inserted
Less than 21	377	12.1
21 to 25	1528	49.2
26 to 29	842	27.1
More than 29	360	11.6

Table 3: Reasons for non-acceptance and withdrawal of PPIUCD.

Reasons	Antenatally counselled, (n=3736)	Counselled on admission, (n=4421)
Decided on another method	388 (10.38%)	676 (15.29%)
Family member/ husband objected	1394 (37.31%)	1691 (38.24%)
Concern about side effects	1012 (27.08%)	1043 (23.59%)
Opted for interval sterilization	515 (13.78%)	512 (11.58%)
Religious belief and other reasons	427 (11.42%)	499 (11.28%)

Table 4: Complications on follow-up after PPIUCD insertion.

Complication	No. of women, (n=718)	% of women, (23.10)
Excessive bleeding PV	528	19.9
White discharge PV	132	4.99
Pain abdomen	56	2.11
Expulsion	02 (post-placental)	0.075

DISCUSSION

In the present study, the rate of PPIUCD insertion was 21.88%. Studies have documented acceptance for PPIUCD ranging from 26% to 60%.[7-9] Among 6258 pregnant women counselled antenatally, 2522 women accepted for PPIUCD insertion (40.3%), and among this group, a total of 2450 (97.14%) copper T insertions were done. However, only 585 (11.68%) out of 5006 women counseled on admission had the copper T insertion. This huge difference in the insertion rate shows that counselling and sensitization of women and their family members in the antenatal period play a crucial role in improving the acceptance rate of PPIUCD, as observed in other studies.[9] According to a knowledge and attitude analysis about the usage of PPIUCD, there was a moderate level of awareness, significant gaps in knowledge, and a low usage rate among the pregnant women.[10] The most common reason for non-acceptance in the present study was family member objection or husband objection, followed by the concern about its side effects. Other reasons for denial were opting for interval sterilization, deciding on another method, denial due to religious beliefs, and other reasons. There is a wide disparity in acceptance rates because of the differences in awareness level, religious beliefs, level of education, and misconceptions about the use of PPIUCD. The Primary caregiver or the Obstetrician plays a crucial role in motivating the woman and her family members about the use and advantages of PPIUCD. The stigma that it carries in the minds of the people can be overcome by proper guidance and approach. The advantages of PPIUCD, like it is long-term reversibility and high efficacy, have to be emphasized while counselling the women and help in improving the acceptance rate as shown in various studies.[7,11]

In the present study, 2120 (23.94%) of primigravida got PPIUCD insertion, and 987 (18.47%) multigravida got the PPIUCD insertion, indicating more receptivity and acceptability for a long-term reversible mode of contraception in primigravida, whereas the rate of insertion in multigravida was less because they tend to choose a permanent method of contraception once they have completed their family. This is similar to various other studies where primiparous women were more inclined towards the spacing method, while multipara women were interested in the permanent form of contraception.[7,11]

In the present study, among 3107 women who got PPIUCD inserted, 1528 (49.2%) were between 21-25 years, and 842 (27.1%) were between 26-29 years, indicating maximum acceptability and usage among the young females between 21 to 29 years, which is similar to other studies showing that IUCD usage is more among young females.[12]

In the present study, 159 (6.01%) women came for removal of PPIUCD due to side effects but were counselled for continuation of PPIUCD. The continuation rate declined after the first 6weeks of insertion, and the crude cumulative rate of IUCD discontinuation was 16.79% during the first year, according to other similar studies.[4,13] This emphasises the need to tackle the problem of discontinuation through effective follow-up services to address the complications, educational strategies, and counselling to motivate the women for continuation of Copper T.

In the present study, no complications, such as perforation or misplaced IUCD, were reported. The complications reported in our study were excessive bleeding in 528 (19.9%) women, 132 (4.99%) had white discharge per vagina, and 56 (2.11%) had abdominal pain, which are similar to other studies.[5,6] These conditions were treated on an outpatient basis, and the women were encouraged to continue the IUCD. Though the incidence of excessive bleeding per vagina, vaginal discharge, and abdominal pain is low and easily treatable, and the incidence of perforation and misplacement is remote, it has greatly impacted the acceptance rate of PPIUCD and caused stigma in the minds of people.

This can be addressed through impactful education and counselling by the caregivers to improve the acceptability of PPIUCD. Also, there is a need for sufficient training of the caregivers for the proper technique of PPIUCD insertion, follow up and counselling of the women.

In the present study, there are 2 cases (0.075%) reported with expulsion of PPIUCD, which was inserted in the immediate postpartum period. Other studies show an expulsion rate ranging from 2% to 8.67%.[5,12,14] The expulsion rate of PPIUCD can be reduced with proper insertion techniques and the use of trained staff. In a cesarean section expulsion rate is low, which may be because of the direct placement of PPIUCD over the fundus of the uterus. Various studies report that higher age, higher parity, lack of satisfaction, and motivation to continue were predictors of expulsion.[5]

The strength of our present study was that we enrolled a large number of women with meticulous follow-up, and the limitation is that the follow-up was done only for 6 weeks postpartum and hence lacks data on the long-term outcome of PPIUCD insertion with respect to its complications and continuation.

CONCLUSION

Immediate postpartum insertion of IUCD appears to be a safe and effective method of contraception. This method is particularly beneficial for women who do not come for post-natal IUCD counseling and usage. The women and the family members need education and counselling regarding PPIUCD insertion, emphasizing its advantages by the trained staff in order to improve its acceptability. All the institutions providing health care to women need to be trained in the correct insertion technique of PPIUCD, counselling of women and family members, to propagate this novel method of contraception, and to motivate the women for continuation of IUCD by providing effective follow-up service.

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