



## Evaluation of postpartum intrauterine contraceptive device in terms of awareness, acceptance and expulsion

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### Abstract

**Introduction:** Immediate postpartum period is when women are receptive to family planning counselling. Pregnancy within a year of the last delivery increases maternal and perinatal morbidity and mortality. Postpartum intrauterine contraceptive device (PPIUCD) is one method which is safe and effective method for spacing and also for limiting pregnancy. This study was done to evaluate PPIUCD insertion for its awareness, acceptance, and expulsion.

**Materials and methods:** All pregnant women were counselled regarding PPIUCD, and those willing were included in the study. Intrauterine contraceptive device used in this study was Cu-T 380A. It was inserted after delivery of the placenta after vaginal delivery and after caesarean section using sponge-holding forceps. They were asked to follow up after 6 weeks and 6 months of insertion. Data collected was subjected to statistical analysis using SPSS V22 software, and results were drawn.

**Results:** From 1602 deliveries, 456 (28.46%) women accepted PPIUCD, and 36.32% (n=582) were aware of this method. 60.08% (n=274) had PPIUCD insertion after vaginal delivery and 39.91% (n=182) after caesarean section. The main reason for refusal was fear of bleeding (n=280) (26.81%). The most common complication seen was lower abdominal pain (11.62%). No case was reported with uterine perforation.

**Conclusion:** This method has shown to be a very safe, effective and economical method for contraception. In India, where there is very little access to contraception during interval period and women do not return to the hospital for a postnatal check-up and contraceptive advice, this PPIUCD method is most beneficial.

**Keywords:** postpartum; PPIUCD; contraception; counselling

### Introduction

In the immediate postpartum period, women are receptive to family planning counselling but are unaware of the options available, so they go home without proper contraceptive advice. This leads to 86% of unwanted and unplanned pregnancies, and 88% of them undergo induced abortion and thus increasing morbidity and mortality [1, 2].

India is taking steps to lower the maternal mortality ratio, but according to the world bank 2012 report, UNFPA, WHO 20% of worldwide maternal deaths are seen in India [3]. In India, the 2005-2006 National Family Health Survey showed that 61% of births were because of less than 3 years of spacing and 22% of couples were unaware of family planning options [4]. If proper family planning practices are followed, maternal deaths can be reduced by one-third and neonatal mortality by 10% [5].

Postpartum intrauterine contraceptive device (PPIUCD) is an ideal, effective, economical, one-time application, reversible, easy to administer, does not affect breastfeeding, requires less medical supervision and is a good option for spacing of births available [6]. PPIUCD can be inserted during caesarean section after delivery of the placenta, immediately after vaginal delivery, and

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even up to 48 hours after delivery [3]. Cochrane reviews showed that postpartum IUCD insertions are safe and feasible in various settings [7].

In India and other developing countries, women return to their villages after delivery. Usually, they do not visit the hospital for a routine postnatal check-up, so it is less likely that they will go to the hospital for family planning advice. They should be given an option for a very effective method of contraception where PPIUCD has a good role. This study was conducted to assess the awareness, acceptance and complications of PPIUCD.

## Materials and methods

This is a prospective study done in the Department of Obstetrics & Gynaecology, NRI Medical College, Chinnakakani, Mangalagiri, Andhra Pradesh, India, for one year from July 2021 to June 2022. A total of 1602 deliveries occurred in this period. Written and informed consent was taken from all the women participating in the study. Ethical approval for this study was taken.

Inclusion criteria were all women who delivered vaginally or by caesarean section consented to PPIUCD insertion. Exclusion criteria were women not willing to PPIUCD, chorioamnionitis, atonic PPH, PROM for > 18 hours, fever, fibroid uterus, uterine anomalies, HIV-positive women.

All antenatal women who came for regular antenatal check-ups or delivery were counselled regarding PPIUCD insertion, and those who were willing were included in the study after taking informed written consent. Cu-T 380A device was used for this study. Cu-T 380A was placed in the uterine cavity using sponge-holding forceps after delivery of the placenta after vaginal delivery or caesarean section delivery. Patients were asked to follow up after 6 weeks for a check-up or earlier if any complication occurred like excessive vaginal bleeding, foul-smelling vaginal discharge, lower abdominal pain, and expulsion of Cu-T.

They were examined at 6 weeks of follow-up, and excess Cu-T threads were cut, leaving 2 cms thread from the external os. Later they were asked to follow up after 6 months.

All the parameters like age, parity, awareness about PPIUCD, acceptance, type of insertion like after vaginal or caesarean delivery, complications, side effects, expulsion, reasons for removal, and reason for declining of PPIUCD were noted.

## Statistical analysis

Data was collected and entered in a Microsoft excel sheet and subjected to statistical analysis using the software SPSS V 22. Results were presented in percentages.

## Results

A total of 1602 deliveries occurred in the study period. 456 patients (28.46%) were willing to PPIUCD insertion. 215 cases (13.42%) who accepted were 26-30 years old. Table 1 shows the number of patients aware of PPIUCD and those who accepted PPIUCD insertion in different age groups.

**Table 1:** Awareness and acceptance in different age groups.

Age (years)	Awareness	Percentage (%)	Acceptance	Percentage (%)
18 - 25	103	6.42	162	10.81
26 - 30	320	19.97	215	13.42
31 - 35	116	7.24	68	4.24
> 35	43	2.68	11	0.68
Total	582	--	456	--

24.78% (n=113) who accepted were from rural areas, and 75.21% (n=343) were from urban areas. 41.44% (n=189) cases who accepted had higher secondary education, 29.38% (n=134) were graduates, and above, 22.58% (n=103) had secondary education, and 6.57% (n=30) cases were illiterate.

Out of 456 patients, 72.36% (n=330) were primiparas and 27.63% (n=126) were multiparas. 274 patients (60.08%) had IUCD inserted after vaginal delivery, and 182 patients (39.91%) had after a caesarean section. 280 patients (26.81%) refused because of fear of bleeding (Table 2).

**Table 2:** Reasons for refusal of PPIUCD insertion.

Reason for refusal	No. of cases	Percentage (%)
Prefer other methods	113	10.82
Fear of vaginal bleeding	280	26.81
Refusal of partner/ family	142	13.60
Interferes with intercourse	207	19.82
Religious belief	116	11.11
Cannot decide	186	17.81

11.62% (n=53) had lower abdominal pain as a complication. There was no case of uterine perforation (Table 3).

**Table 3:** Complication/ Complaints which occurred.

Complication/ Complaint	No. of cases	Percentage (%)
Excessive vaginal bleeding	33	7.2
Lower abdominal pain	53	11.62
Genital tract infection	21	4.60
Missing threads	3	0.65
Uterine perforation	0	0

0.65% (n=3) patients had spontaneous expulsion, 0.87% (n=4) had removal because of lower abdominal pain (n=3), and excessive bleeding (1 case).

## Discussion

The awareness rate in the present study was 36.32% (n=582). Valliappan et al [8] showed a 44.8% awareness rate. A study by Katheit et al [9], and Alukal et al [10] showed an awareness rate of 5.79% & 11.1%, respectively. 28.46% (n=456) acceptance rate was seen in this study, with a maximum rate of 13.42% (n=215) in the age group of 26-30 years. Mishra et al [11], Chauhan et al [12], Goswami et al [13], Agarwal et al [14], Doley et al [15] showed acceptance rate of 17.17%, 53.3%, 66.6%, 62.5%, 36.6% respectively. Maluchuru et al [16] showed an acceptance rate of 27.67% in the age group of 30-39 years.

In the present study, 29.38% (n=134) were graduates and above, and 41.44% (n=189) were educated up to higher secondary who accepted this method. Maluchuru et al [16] showed that 40.27% & 19.80% of women with primary & secondary levels of education accepted this method. Katheit et al [9] found an acceptance rate of 65% in literate women. Vidyarama et al [17] showed that 15.7% of literate women accepted as compared to illiterate women (5.3%).

The present study showed 24.78% (n=113) of cases were from rural area, and 75.21% (n=343) were from urban areas. Sharma et al [18] showed that 61.72% belonged to the urban population and 38.27% were from the rural population. In this study 72.36% (n=330) were primiparas and 27.63% (n=126) were multiparas. Mishra et al [11], Maluchuru et al [16], Gautam et al [19], and Vidyarama et al [17] showed 15.42%, 13.76%, 71.91%, 15.47% respectively were primiparas. Grimes et al [7], Goswami et al [13] and Shukla et al [20] showed that 65.1%, 48% and 68.33% were multiparas, respectively.

This study showed that 60.08% (n=274) of women who delivered vaginally accepted PPIUCD insertion. Kumar et al [21] and Rani et al [22] showed that in 62% and 69.3% of patients, PPIUCD insertion was done

after vaginal delivery. Vidyarama et al [17] found more patients accepted during caesarean section (83.73%) and less after vaginal delivery (16.26%).

The present study showed common cause for refusing was fear of bleeding (26.81%) (n=280), and 19.82% (n=207) women did not accept because their partners or family members refused. Maluchuru et al [16] found 46.68% refused because they preferred other methods of contraception. Sharma et al [18] showed 69.96% refused because of fear of complications, and 72.75% did not accept because of refusal from their partners and family members.

This study showed that most patients complained of lower abdominal pain (11.62%) (n=53) and excessive vaginal bleeding (7.2%) (n=33). Chen et al [23] found 20% complained of post-insertion cramps. Nayak et al [24] found that 5.08% had abdominal pain. Eroglu et al [25] and Kittur et al [26] complained of excessive bleeding in 1.2% and 6.2%, respectively. Agarwal et al [14] reported that 17.39% of cases had excessive vaginal discharge, but this study showed that 4.6% (n=21) complained of genital tract infection.

The present study found missing threads in 3 cases (0.65%). Eroglu et al [25] showed the incidence of missing threads was 1.2%. This study did not show any uterine perforation. Celen et al [27], Chen et al [23]. Beltagy et al [28] also reported no case of uterine perforation. The expulsion rate in this study was 0.65% (n=3) which is less than Barala et al [29] (2%) and Shobhasmita et al (6%) [30]. The removal rate in the present study was 0.87% (n= 4). Gaur et al [31] and Rani et al [22] showed 3.8% and 5.48% removal rates, respectively.

Proper counselling of the couple during the antenatal period regarding PPIUCD insertion and its advantages will motivate women and help in the spacing of pregnancies and improve the health of the mother and child. Education creates awareness and increases the acceptance rate.

## Limitations of the study

A small population was studied, which is the limitation of this study.

## Conclusion

PPIUCD is a very effective, safe method of contraception. It is a one-time application and reversible procedure for spacing and limiting pregnancy. Its acceptable rate can be increased with counselling during the antenatal period and promoting institutional delivery. Health

care workers like ASHA (Accredited Social Health Activist) workers should give counselling, and motivate all antenatal women and family members regarding PPIUCD method of contraception.

## Conflicts of interest

Authors declare no conflicts of interest.

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