

## Study of Acceptability of Postpartum Intrauterine Contraceptive Device (PPIUCD) in a Tertiary Care Hospital; Unmasking the Hole and Corner

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### Abstract

**Introduction:** The Intrauterine contraceptive device(IUCD) is one of the safest, effective, long acting and cost-effective method of contraception and reverts fertility as soon as withdrawn; fertility is not impaired at all. Despite of increasing institutional delivery and provision of incentive to PPIUCD provider, patients and ASHAs, the acceptability of PPIUCD is low. The present study was designed to evaluate the acceptability, factors affecting acceptability and side effects of PPIUCD.

**Aims and Objectives :**(a) To study the proportion of women accepting PPIUCD. (b) To study the factors associated with acceptability of PPIUCD in women according to their socio-demographic and obstetrics characteristics, and future pregnancy desire. (c) To study side effects and complications of PPIUCD.

**Materials and Methods:** This study was conducted at Department of Obstetrics and Gynecology, MKCG Medical College and Hospital, Berhampur, Odisha; India for a period of 2 years from September 2019 to August 2021. During this period 24007 women following vaginal delivery (VD) and Lower Segment Caesarian Section (LSCS) were counseled for PPIUCD insertion and only 4657 women agreed and were included in this study. At the end of the study collected data were tabulated and analyzed.

**Results:** Out of 4657 cases 807 cases (17.32 %) were given PPIUCD following vaginal delivery (post placental) and 3850 cases (82.63 %) were given during caesarean section (intra caesarian). The acceptance rate according to mode of delivery were as follows; out of 12860 cases of vaginal delivery counseled, 807 cases (6.3%) taken PPIUCD and out of 11147 cases of caesarian section, 3850 cases (34.5%) accepted PPIUCD. Out of 24007 cases of delivery counseled, 4657 cases accepted PPIUCD. So the overall acceptance rate was 19.03%. Spontaneous expulsion occurred in 75 cases (31.1%) of vaginal delivery and 166 cases (68.9%) of caesarian delivery out of 241 cases. The overall expulsion rate was 8.7 %. On follow up at six months it was found that 241 cases (8.68%) had IUCD expelled spontaneously, 233 cases (8.4%) had IUCD removed for different reasons and 2301 cases (82.92%) were continuing IUCD. The continuation rate of PPIUCD was 82.92 %.

**Conclusion:** The acceptance rate following caesarean section was higher as compared to vaginal delivery due to adequate counseling during antenatal period favors motivation of women to accept PPIUCD following CS. Most of the acceptors had some knowledge about PPIUCD

prior to delivery. Minimal expulsion rate of 8.68% and removal rate of 8.4% was observed in our study. The most common cause of removal was menorrhagia. PPIUCD is relatively safe method of contraception as it has low rates of expulsion, minimal bleeding disturbances and negligible rates of infection. IUCD has the benefit of compliance and long-term reversible contraception.

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## Introduction

The Intrauterine contraceptive device(IUCD) is one of the safest, effective, long acting and cost-effective method of contraception and reverts fertility as soon as withdrawn; fertility is not impaired at all [1]. Labor room is attended by large number of beneficiaries and provides an opportunity for the women to receive various family planning services including IUCD [2]. IUCD can be used safely in lactating mothers as it has no effect on lactation [3]. According to time of insertion post partum intrauterine contraceptive device (PPIUCD) can be classified as following. a) Post-placental: Insertion of IUCD within 10 minutes of delivery of placenta following vaginal delivery. b) Insertion within 48 hours of delivery. c) Intra-caesarean: Insertion during caesarean section, following removal of placenta [4]. In India leading method for contraception is sterilization (40%) but it does not address women's need for healthy birth spacing. This is the place where IUCD's play a dynamic role in providing immediate, long acting, effective contraception [5]. Despite of increasing institutional delivery and provision of incentive to PPIUCD provider, patients and ASHAs, the acceptability of PPIUCD is low. The reasons are lack of awareness, misconceptions about PPIUCD, family pressure and fear of side effects. Globally, 14.3% of women of reproductive age use IUCD, but the distribution of IUCD users is strikingly non uniform. In some countries, the

percentage of women using IUCD is < 2%, whereas in other countries, it is > 40% [6]. The expulsion rate was 16% and was more in multipara than primipara in 6 weeks post-placental group (Bonilla et al) [7]. In another study in India by Hooda et al showed 9.1% expulsion rate in vaginal delivery (VD) group and only 2.1% in caesarian groups [8]. The present study was designed to evaluate the acceptability, factors affecting acceptability and side effects of PPIUCD

## Aims and Objectives

- a) To study proportion of women accepting PPIUCD.
- b) To study the factors associated with acceptability of PPIUCD in women according to their socio-demographic and obstetrics characteristics, and future pregnancy desire.
- c) To study side effects and complications of PPIUCD.

## Materials and Methods

The study was a prospective analytical study to assess the acceptance, awareness and safety of PPIUCD. This study was conducted in the Department of Obstetrics and Gynecology, MKCG Medical College and Hospital, Berhampur, Odisha; India for a period of 2 years from September 2019 to August 2021. During this period 24007 women following VD and lower segment caesarian section (LSCS) were counseled for PPIUCD insertion and only 4657 women agreed and were included in this study. Fever during labour and delivery, women having active sexually transmitted disease (STD) and other genital tract

infections or high risk for STDs, known to have ruptured membrane for more than 18 hours prior to delivery, uterine abnormalities e.g. bicornuate or uterine myoma, manual removal of placenta, unresolved primary post-partum hemorrhage (PPH) or extensive genital trauma, still birth and severe anemia (Hb <7 gm%) were excluded from this study. Informed written consent were taken from those willing to take PPIUCD after explaining the possible complications and PPIUCD (Cu-T 380A) inserted. They were advised for follow up at 6 weeks, and 6 months to 1 year postpartum or any time if any complication develops. During follow up, they were enquired for changes in menstrual pattern, pain abdomen, fever, abnormal vaginal discharge, or expulsion. Speculum examination was done to ensure presence of Cu-T inside uterine cavity. They treated symptomatically and reassured about its safety. The data collected were tabulated and analyzed at the end of the study.

## Results

In accordance to age groups of cases accepted PPIUCD, majority cases i.e. 3082 cases (66.15%) belonged to age group of 20-25 years followed by 1035 cases (22.21%) belonged to age group of 25-30 years, 391 cases (8.4%) belonged to age

group of < 20 years; and 149 cases belonged to age group of >30 years (3.2%).

Majority of patients were primipara in 3589 cases (77.1%) followed by multipara in 1068 cases (22.9%). Most of the cases, 4387 cases (94.16%) were booked during ANC whereas 270 cases (5.8%) were un-booked. Out of the cases who received PPIUCD, most of cases i.e. 3967 cases (85.14%) belonged to rural area and only 690 cases (14.8%) belonged to urban area. Majority of the cases i.e. 2994 cases (64.26%) belonged to average socio-economic status (SES) and only 23 cases (0.5%) belonged to high SES. Majority of the recipients i.e. 4345 cases (93.26%) were housewives whereas 312 cases (6.7%) were working women. Majority of cases, 2919 cases (62.65%) had prior knowledge about PPIUCD but 1738 cases (37.30%) didn't know about PPIUCD. Out of 4657 cases 807 cases (17.32 %) were given PPIUCD following vaginal delivery (post placental) and 3850 cases (82.63 %) were given during caesarean section (intra caesarian). Acceptance rate according to mode of delivery were as follows; out of 12860 cases of vaginal delivery counseled 807 cases (6.3%) taken PPIUCD and out of 11147 cases of caesarian section counseled 3850 cases (34.5%) accepted PPIUCD.(Table-I).

**Table 1: Acceptance according to mode of delivery**

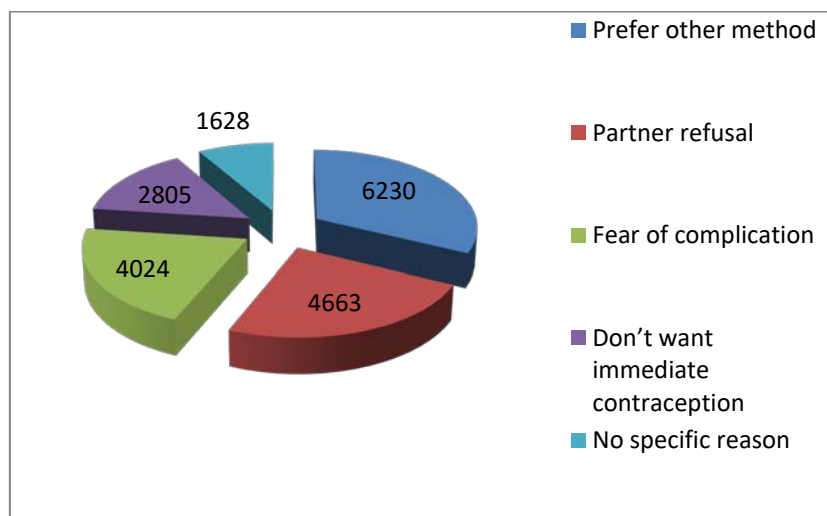
Mode of delivery	Total delivery	No. of cases counseled	No. of cases received	Percentage
VD	13877	12860	807	6.3%
CS	11387	11147	3850	34.5%

Acceptance according parity it was showed as follows; 16312 cases of primipara were counseled out of 17154 cases of delivery and 3589 cases (22%) accepted PPIUCD whereas 7695 cases of multipara were counseled out of 8110 cases of multipara and 1068 cases (13.8%) accepted the above. Out of 24007 cases of delivery counseled, 4657 cases accepted PPIUCD. So the overall acceptance rate was 19.03%.

Most of the cases, 3068 cases (65.85%) received PPIUCD for its long-term effectiveness, 1243 cases (26.7%) received as it is a reversible method and 346 cases (7.42%) received as it was safe. The reason for refusal to accept PPIUCD out of 19350 cases were as follows; 6230 cases (32.2%) refused as they prefer other method of contraception, 4663 cases(24.1%) due to partner refusal, 4024 cases(20.8%) because

of fear of complication, 2805 cases(14.5%) do not want immediate contraception and

1628 cases (8.41%) had no specific reason.(Figure-1).



**Figure 1: Reason for Refusal**

Out of 807 cases of vaginal delivery accepted PPIUCD, 697 cases (86.37%) experienced no pain during insertion of PPIUCD followed by mild pain complained by 110 cases (13.63%) and severe pain was complained by none. Out of 4657 cases accepted PPIUCD, only 2775 cases (59.56%) were followed up and 1882 cases (40.4%) were lost to follow up. Among the 2775 cases followed up, 468 cases (16.86%) belong to the vaginal delivery and

2307 cases (83.14%) belonged to caesarian section. During follow up, out of 2775 cases, heavy bleeding during period was found in 252 cases (9.08%), followed by expelled IUCD in 241 cases (8.68%), missing thread in 130 cases (4.68%), pain abdomen in 88 cases (3.17%) and excessive vaginal discharge in 57 cases (2.05%). None of the cases had infection. (Table-2). No case of perforation or ectopic pregnancy found.

**Table 2: Complications of PPIUCD**

Complications	No of Cases(n=768)	Percentage
Menorrhagia	252	9.08
Missing String	130	4.68
Vaginal Discharge	57	2.05
Expulsion	241	8.68
Pain abdomen	88	3.17

Spontaneous expulsion occurred in 75 cases (31.1%) of vaginal delivery and 166 cases (68.9%) of caesarian delivery out of 241 cases. The overall expulsion rate was 8.7 % considering the cases followed up. Out of all cases followed up, 1879 cases (67.7%) belonged to primipara whereas 896 cases (32.3%) belonged to multipara. Spontaneous expulsion was seen in 131

cases (6.92%) of primipara and 110 cases (12.3%) of multipara out of 1879 cases and 896 cases respectively followed up i.e more in multipara. On evaluation of status of PPIUCD at six months it was found that 241 cases (8.68%) had IUCD expelled spontaneously, 233 cases (8.4%) had IUCD removed for different reasons and 2301 cases (82.92%) were continuing IUCD.

Menorrhagia was the most common cause of removal of PPIUCD in 87 cases (37.34%) followed by pain abdomen in 63 cases (27.04%), string problem in 51 cases

(21.9%) and excessive vaginal discharge in 32 cases (13.73%) out of 233 cases requiring PPIUCD removal.(Table-3)

**Table 3: Reason for Removal**

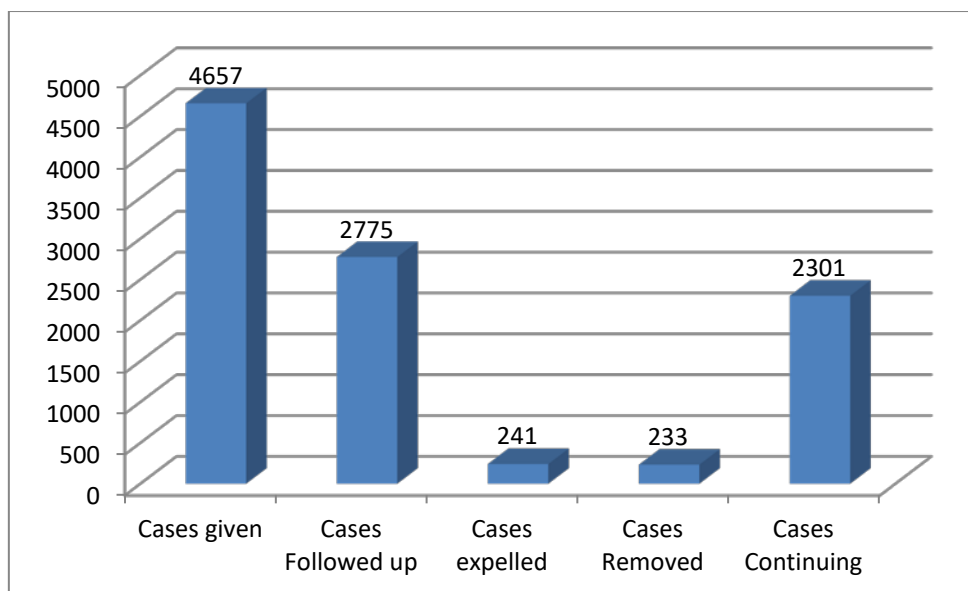
Cause of removal	No. of cases (n=233)	Percentage
Pain abdomen	63	27.04
Menorrhagia	87	37.34
String problem	51	21.9
Vaginal Discharge	32	13.73

Out of 130 cases of lost strings found, 88 cases (67.7%) had strings coiled in cervical canal, 33 cases (25.38%) had strings inside uterine cavity and 9 cases (6.92%) had no strings (with PPIUCD in uterine cavity). (Table-4)

**Table 4: Causes of Lost String (Excluding expulsion)**

Cause	No of cases(n=130)	Percentage
Coiled in cervical canal	88	67.7
Curled up in Uterus	33	25.38
String not found	9	6.92

Out of 4657 cases studied 2775 cases followed up, 241 cases expelled spontaneously, 233 cases removed IUCD for different reason enumerated above and 2301 cases continuing PPIUCD thus the continuation rate was 82.92%.(Figure-2)



**Figure 2: Continuation Rate**

**Discussion**

In the present study, out of 24,007 women were counseled only 4657(19.4%) accepted to use PPIUCD and were

included in the study conducted in MKCG Medical College, Berhampur, Odisha; India during above period. Majority (66.2%) of the cases who accepted

PPIUCD belonged to the age group of 20-25 years which was similar to that of Kanhere et al having 88.5% belonging to age group of 20-29 years [9].

Majority of patients were primipara in 3589 cases (77.1%) followed by multipara in 1068 cases (22.9%) as primipara wanted birth spacing which was comparable to Ramya K S et al having acceptance in primipara (73.8%) and in multipara (51.4%) who attended for delivery in a tertiary care hospital [10]. The acceptance in multipara can be increased by educating them about the long-term efficacy and reversibility of PPIUCD and thus the complications associated with sterilization procedure can be avoided. Majority (94.2 %) cases were booked, had antenatal counseling for family planning before delivery and more likely to accept PPIUCD which was similar to that of Prabha Lal et al who described that PPIUCD acceptors were booked in 84% cases [11]. Most of the women (62.6%) had prior knowledge about IUCD. 37.4 % women had no knowledge regarding IUCD which was similar to that of Somesh et al showing that 53.5 % have heard about PPIUCD [12].

Out of all CS cases given PPIUCD, acceptance rate was higher (34.5%) in caesarian group as compared to cases who underwent vaginal delivery (6.3%) (Table-I). Richa Roy et al found similar result; acceptance rate was higher (35%) in intra-caesarean group than VD group [13]. In a similar study by Sangeetha Jairaj et al acceptability was higher following CS (43.9%) than VD (6.3%) [14]. Majority of the women (82.68%) received PPIUCD during caesarean section and 17.32 % received after vaginal delivery in this study. The decreased acceptance among VD group was due to lack of proper counseling. Reetu Hooda et al found that 58.3% insertions were intra-caesarean and 41.7% IUCDs were after vaginal delivery which was not concurrent

to our study and needs further evaluation [8].

The acceptance rate was high in primipara(22%) as compared to multipara (13.8%). Mishra et al found high acceptance among primipara (20.7%) in his study [15]. Safwat et al showed that 30% of primipara accepted the PPIUCD as compared to 15% of multipara [16]. Overall acceptance rate was low i.e 19.4 % which is similar to that of Mishra et al having 17.17 %. Majority (65.9%) of recipient accepted as it was effective for long term period which was concurrent to that of Rajni et al (54.8%) [17]. Majority of women (32.2%) declined as they preferred other methods of contraception followed by partner refusal (24.1%) and fear of complication (20.8%). Sangeetha Jairaj et al found similar result in their study, the most common reason for refusal being interest in other methods (63.97%) and partner refusal (17.17%) [14]. Reasons for refusal in Gunjan et al study were fear of complications (41%), not accepted by partner (35%), inclined to other methods (22%), did not have any reason (5%) and declined on religion basis (1% ) [18]. No pain was perceived by majority (86.3%) of recipients during insertion which was similar to study by Somesh et al(71%) [12]. In this present study 59.6 % cases were followed up and 40.4% were lost to follow up, as most of the patients who delivered in our hospital are from rural areas. It was not similar to study of Rajni et al having 64.77%. % recipients were lost to follow up and needs more study [17].

Heavy bleeding was the most common complication (9.08%) followed by expulsion (8.68 %), missing strings (4.68%), pain abdomen (3.17 %) and excessive vaginal discharge (2.05%). Gautam R et al found bleeding to be the most common complication in 19% cases which was not similar to our study [17]. Bleeding per vaginum was the most common complain during follow up in

252 cases (9.08%) which were concurrent to that of Welkovic et al (5.5%) [19]. Overall expulsion rate was 8.68 % in our study which was concurrent to that of Geeta et al (8.99%) [20]. All the expulsions were within 6 weeks of post-partum. Expulsion was more in vaginal delivery (16%) as compared to caesarian delivery (7.2%). Expulsion rate was low in intra-caesarean insertions due to placement of IUCD under direct vision as compared to vaginal delivery. Similar results were observed by Rina et al where expulsion rate was 11.1 % in vaginal delivery and 3.84% in caesarian delivery [21]. Expulsion rate was 12.3% in multipara and which was higher than primipara (6.9%). Khudija et al also found higher expulsion rate among multiparous women which was similar to current study [22]. The cumulative removal rate at 6 month was 8.4 % which was parallel to that of Mishra et al and Gupta et al having 9.91% and 5.6 % respectively [15,23]. The continuation rate at 6 month was 82.9% which is concurrent to that of Kittur et al (86.19 %) [24]. Most common reason for removal was menorrhagia in 87 cases (37.3%) followed by pain abdomen in 63 cases (27.1%) and string problem in 51 cases (21.9%). Runjun et al found that the most common reason for removal was bleeding (42.11%) followed by pressure from family (17.54%) and removal due to changes in the menstrual cycle and pain abdomen (15.79%) [25,26].

### Conclusion

In the current study majority of women (66.2%) belonged to age group of 20-25 yr, booked (94.2%) and from rural areas (79.4%) accepted the PPIUCD. The acceptance rate of PPIUCD in our study was 19.4 %; the acceptance rate was higher in primipara as compared to multipara. The acceptance rate following caesarean section was higher as compared to vaginal delivery due to adequate counseling during antenatal period favors motivation of women to accept PPIUCD following LSCS. Most of the

acceptors had some knowledge about PPIUCD prior to delivery. Most of cases experienced no pain during PPIUCD insertion. No cases of uterine perforation or cervical laceration during insertion seen. Majority had no complication and minimal complication like menorrhagia in 9.08% cases only. Minimal expulsion rate of 8.68% and removal rate of 8.4% was observed in our study. The most common cause of removal was menorrhagia. Among those aware of PPIUCD, rate of acceptance is high, but the overall acceptance rate is poor which may be attributed to the fact that many women were unaware and informed about the benefits of PPIUCD only when they were admitted for delivery. Hence, effort should be made to educate women about safety, proper usage and convenience of modern, long-term, reversible methods of contraception. PPIUCD is relatively safe method of contraception as it has low rates of expulsion, minimal bleeding disturbances and negligible rates of infection. IUCD has the benefit of compliance and long-term reversible contraception. Regarding bleeding disturbances, the mother needs to be reassured and allowed medical management rather than immediate removal of PPIUCD. The risk of unwanted pregnancy and abortion increases maternal morbidity and mortality. The patients should be counseled regarding the advantages of PPIUCD even in the antenatal clinic itself as successful family planning measures helps to avert maternal deaths and neonatal deaths.

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