

Original Article

Acceptance of Postpartum Intrauterine Contraceptive Device as a Method of Contraception in a Tertiary Care Hospital, Karachi

Memoona Rehman¹, Omema Akhtar², Haleema Yasmin³, Erum Majid⁴

¹ Assistant Professor, ² Junior Consultant, ³ Professor, ⁴ Associate Professor
Department of Obstetrics & Gynaecology, JPMC, Karachi

Correspondence: Dr Omema Akhtar

Junior Consultant, Department of Obstetrics & Gynaecology, JPMC
omaima_akhtar@yahoo.com

Abstract

Objective: To determine the acceptability of Post-Partum intra uterine contraceptive device, its safety and efficacy among the users.

Methodology: This observational prospective study was conducted in Jinnah Postgraduate Medical Centre, Karachi from January 2017 - July 2019. Non-probability consecutive sampling technique was used. After informed and written consent, patients who were fulfilling the inclusion criteria were included in our study and were counselled for various methods of modern contraception. Patients opting for postpartum intrauterine contraceptive device (PPIUCD) were followed. Data was entered and analyzed in SPSS 22. Continuous variables were reported using Mean±SD and categorical variables were reported in percentages.

Results: A total of 2960 women, 283 (9.5%) gave consent for PPIUCD. PPIUCD was inserted in 218 (7.3%) patients. Out of 218, 20 patients did not turn for follow up therefore removed from the study. Mean age of the patients was 27.1±4.3years (17-39years). Primigravida were 30 (15.2%) and 168 (84.8%) were multigravida. Acceptance was higher among gravida 2 (26%) and gravida 3 (25%). 126(63.6%) Patients had PPIUCD placed after normal vaginal delivery and 72(36.4%) patients had PPIUCD placed after cesarean section (emergency and elective). spontaneous expulsion of PPIUCD was reported by 6 patients but none of the patients wished for the removal of PPIUCD after its insertion. There were no cases of perforation. Infection after PPIUCD insertion was reported in 2 (1%) patients. 16 (8.1%) patients complained of heavy vaginal bleeding that resolved by taking mafenamic acid and tranexamic acid.

Conclusion: Postpartum insertion of intrauterine contraceptive device is an effective, safe, reversible, long acting contraceptive method.

Keywords: Intra-uterine contraceptive device, Contraception, Postpartum, PPIUCD.

Cite this article as: Rehman M, Akhtar O, Yasmin H, Majid E. Acceptance of Postpartum Intrauterine Contraceptive Device as a Method of Contraception in a Tertiary Care Hospital, Karachi. J Soc Obstet Gynaecol Pak. 2022; 12(2):91-94.

Introduction

Healthy spacing and timing of pregnancy can play a vital role in reduction of neonatal and maternal mortality. Family planning not only reduces hunger and poverty but also averts 32% of all maternal deaths and 10% of all childhood deaths.¹ Short intervals between pregnancies is linked with high neonatal mortality and morbidity.² Therefore, awareness regarding family planning should be provided to women in pre conception counseling and antenatal period. There is a need of availability of a range of effective contraceptive methods to be able to prevent an unplanned pregnancy

by women in postpartum.³

There is a wide range of short and long acting contraceptive methods available like condoms, OCPs, injectable, intrauterine contraceptive device (IUCD), sterilization etc. Among the available options Copper containing intra uterine contraceptive device (Cu IUCD) is the most cost effective long term contraceptive method. Cu IUCD is non-hormonal, long acting, reversible contraceptive device that can be used safely in breast feeding. It induces a local inflammatory reaction in the endometrium making the environment

Authorship Contribution: ^{1,2,4}Substantial contributions to the conception or design of the work, acquisition, analysis, or interpretation of data for the work, data collection, Drafting the work or revising it critically for important intellectual content, ³Final approval of the version to be published.

Funding Source: none
Conflict of Interest: none

Received: Aug 07, 2021
Accepted: April 21, 2022

hostile for sperms.^{4, 5} A Cochrane review published in 2010 concluded that postpartum intrauterine contraceptive device (PPIUCD) is a safe and effective contraceptive method. Its popularity and acceptability is linked with the convenience, woman's acceptance for contraception may be high and assurance that woman is not pregnant.^{3, 6} Another Cochrane review published in 2007 examined 35 randomized control trials; it was concluded that Copper-T 380A was more effective in preventing pregnancy than the other devices including the Multiload 375, Multiload 250, Copper T 220 and Copper T 200.⁵

Pakistan is a country with high fertility rate. According to Pakistan Demographic and Health Survey (PDHS) 2012-2013 fertility rate is 3.8. It means that if fertility levels remain constant as observed in three year period before the survey; on average a Pakistani woman will give birth to 3.8 children by the end of her reproductive life. Although Pakistan's fertility has declined from 5.4 (PDHS 1990-91) to 3.8 (PDHS 2012-13) still there is a long way to go to meet the Millennium Development Goals target of 2.1 births per woman.⁷ 26% of women are using modern methods of contraception.⁷ 35% of married women use contraceptive method. Unmet need of contraception is 65%.⁸ Contraceptive use is low because of multiple factors including lack of awareness, lack of facility, cultural, religious and social barriers. Often it has been observed that time of delivery is the only time when a woman visits the hospital and most of the women who are discharged after delivery and advised for follow up for contraception after 6 weeks fail to come up for follow up. As a result they tend to conceive unintentionally.⁹ Therefore, PPIUCD is the most applicable method for our country. Over 5 years, the use of modern contraception has remained stagnant. According to PDHS 2017-2018 25% women are using modern contraceptive methods. Most common used method is male and female sterilization or condom (9% each).¹⁷

The purpose of this study is to see the acceptability of PPIUCD, its safety and amongst users.

Methodology

This prospective, observational cross sectional study was conducted in Jinnah Postgraduate Medical Centre, Karachi from January 2017 - July 2019. A Sample size of 2960 was calculated using openEpi calculator; keeping confidence interval of 99.99% with 1% margin of error. Hypothesized frequency of PPIUCD as observed in PDHS 2012-2013 and 2017-18 was 2%.^{7,17}

Non probability consecutive sampling technique was used. All women visiting antenatal clinics included in the study were counselled regarding various modern contraceptive methods after informed and written consent. The consent was taken in antenatal period and at the time of delivery from the patient and her partner. Women were given various options of modern contraception methods including IUCD, Implant, Injectables, Contraceptive pills and tubal ligation. Their choices were noted down and women who opted for postpartum insertion of intrauterine contraceptive device were followed. These women either had normal vaginal delivery or cesarean delivery. Women who consented for placement of postpartum intrauterine contraceptive device but had postpartum hemorrhage, pre-labor rupture of membranes >18 hours, obstructed labor, signs of chorioamnionitis, severe anemia (Hb<7g/dl), distorted uterine cavity (fibroid uterus or congenital anomaly) or active genital tract infection were not placed IUCD right after delivery and hence were excluded from the study.

Cu IUCD was inserted within 10 minutes of delivery of placenta. In women who had vaginal delivery Cu IUCD was placed by holding it in Kelly's forcep and was placed at the uterine fundus vaginally. During cesarean section Cu IUCD was placed at the uterine fundus through lower segment transverse incision and thread was passed through the cervix. In both cases patient was advised to follow up after 6 weeks and thread was cut. Safety was determined by assessment for perforation, infection or heavy vaginal bleeding.

Data was entered and analyzed in SPSS 22. Continuous variables were reported using Mean±SD and categorical variables were reported in percentages.

Results

From 2960 cases, 728 (24.5%) accepted some form of modern contraceptive method. 29 (1%) patients accepted injectable contraceptives, 89 (3%) accepted subdermal implant, 90 (3%) accepted oral contraceptive pills, 237 (8%) accepted tubal ligation and 283 (9.5%) accepted PPIUCD as a mode of contraception and gave written consent for its insertion during antenatal visit or at the time of delivery. PPIUCD was inserted in 218 (7.3%) patients. Out of 218, 20 patients did not turn for follow up hence removed from the study. Despite having consent from 65 patients, PPIUCD was not inserted because of PPH or prolong labour with rupture of membranes > 18 hours. PPIUCD was placed within 10 minutes of delivery of placenta.

Mean age of the patients was 27.1 ± 4.3 years (17-39 years). 30 (15.2%) were primigravida and 168 (84.8%) were multigravida. Acceptance was higher among gravida 2 (26%) and gravida 3 (25%) 126 (63.6%). Patients had PPIUCD placed after normal vaginal delivery and 72 (36.4%) patients had PPIUCD placed after cesarean section (emergency and elective). Six patients had spontaneous expulsion of PPIUCD. There was no significant difference in expulsion rates between normal vaginal deliveries and cesarean deliveries (p value > 0.05). However, none of the patients wished for the removal of PPIUCD after its insertion on follow-up. (Table I) There were no cases of perforation. 2 (1%) of 198 patients complained of infection after PPIUCD insertion. 16 (8.1%) patients complained of heavy vaginal bleeding. These patients were counselled and symptoms were resolved after taking first line therapy for heavy vaginal bleeding (mefenamic acid and tranexamic acid). (Table II)

Table I: Patient distribution according to of gravidity and (n-198)

Acceptance of PPIUCD among Primigravida and multigravida		
Gravida	N	%
Primigravida	30	15.2
Multigravida	168	84.8
PPIUCD insertion in spontaneous vs cesarean deliveries		
Spontaneous vaginal deliveries	126	63.6%
Cesarean deliveries	72	36.4%
PPIUCD insertion in different mode of deliveries		
Spontaneous vaginal delivery	122	61.6
Assisted breech delivery	3	1.5
Instrumental delivery	1	0.5
Emergency cesarean section	52	26.3
Elective cesarean sections	20	10.1

Table II: Expulsion rate and complications of PPIUCD (n-198)

	N	%
Expulsion of PPIUCD after insertion		
Yes	6	3.0
No	192	97.0
Infection after PPIUCD insertion		
Yes	2	1.0
No	196	99.0
Heavy vaginal bleeding after PPIUCD insertion		
Yes	16	8.1
No	182	91.9

Discussion

Our study of insertion of PPIUCD in a tertiary care hospital of Karachi indicates that most women were satisfied with their choice of PPIUCD as contraception. It is a safe, effective and reversible method¹⁰

recommended by WHO. PPIUCD is non-hormonal contraceptive safe in breast feeding.¹¹ Immediate postpartum period is a good opportunity as women are highly motivated for contraceptive use and common side-effects like lower abdominal pain and vaginal bleeding can be masked by lochia.^{8, 12} In developing countries like Pakistan, sometimes it is the only time when a woman comes in contact with health care provider. If these women are made to wait for 6 weeks for effective contraception, they may conceive again.⁹

According to our study 9.5%, women accepted PPIUCD as a safe and reliable method of contraception. However PPIUCD insertion was carried out in 7.3%, If compared with the PDHS (2012-13) and PDHS (2017-18), 2% of women accepted PPIUCD as safe and reliable method of contraception. With the rise in awareness of PPIUCD, its acceptability and demand has increased in our female population. However, in order to meet the Millennium Development Goals and meet the unmet need for contraception, there is still a need to raise awareness and dispel myths and misconceptions about PPIUCD. There were no reported cases of perforation. Only 2 (1%) patients reported having mild pelvic inflammatory disease after 6 weeks of follow-up. There was no significant difference in the infection rate among PPIUCD insertion after vaginal delivery or during caesarean section. Our results support other regional as well as international studies in this aspect. A local study conducted in Sindh Government Hospital Qatar during March 2011 February 2012 showed no cases of perforation or infection.⁸ Another local study conducted in Sobhraj Maternity Hospital Karachi had infection rate of 0.2%.¹² Study conducted by Welkovic et al. compared the incidence of heavy bleeding and infection among patients who accepted PPIUCD with those who refused PPIUCD and observed no increase in incidence of heavy bleeding or infection.¹¹ Another study compared PPIUCD insertion in immediate post placental period with early postpartum period and found similar results.¹³ In this study 8.1% patients reported with heavy vaginal bleeding. Patients were counselled and were given mafenamic acid and tranexamic acid. Patients responded to the treatment and there were no cases of removal of PPIUCD because of heavy vaginal bleeding not responding to treatment. However local studies showed 29.3% and 6.6% patients reported with complained of heavy vaginal bleeding and had removal of IUCD.^{8, 12} A study conducted in India showed 283/1307 complained of heavy bleeding during

menstruation and 65 patients got it removed.¹⁴ However study conducted by Welkovic et al. showed no increase in incidence of heavy bleeding.¹¹ In this study 3% patients reported with expulsion of PPIUCD on 6 week follow-up. Statistically we observed no difference in the expulsion rates among patients who had PPIUCD inserted after normal vaginal delivery or during cesarean section. However, a local study showed significant difference in expulsion rates by insertion route. 6.6% and 1.3% had spontaneous expulsion among normal vaginal deliveries and cesarean deliveries at 6 months follow up.⁸ Another local study showed no significant difference in expulsion rates between interval insertion and intra cesarean insertion.¹⁵ A study conducted in India by Singal et al. showed expulsion rate of 5.33%.¹⁶ In current study none of the patients wished for the removal of PPIUCD after its insertion. Patients were satisfied and wished to continue using it as contraception. No patients reported with pregnancy with PPIUCD in situ in our study. Short follow up period and small sample size are the limitations of the study.

Conclusion

Postpartum insertion of intrauterine contraceptive device is an effective, safe, reversible, long acting contraceptive method. Efficacy of this method is comparable to tubal ligation. Patients undergoing cesarean sections should be given this as an option for contraception. In countries like Pakistan where delivery might be the only time when a woman comes in contact with a health care provider, it can be an effective method of contraception. Awareness regarding PPIUCD should be provided to women on large scale. Early follow up is important to identify cases of IUCD expulsion.

References

- Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. *Lancet*. 2006 Nov 18;368(9549):1810-27. PubMed PMID: 17113431.
- Rutstein SO. Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the demographic and health surveys. *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics*. 2005 Apr;89 Suppl 1:S7-24. PubMed PMID: 15820369.
- Kumar S, Sethi R, Balasubramaniam S, Charurat E, Lalchandani K, Semba R, et al. Women's experience with postpartum intrauterine contraceptive device use in India. *Reproductive health*. 2014 Apr 23;11:32. PubMed PMID: 24755312. Pubmed Central PMCID: 4062773.
- Ortiz ME, Croxatto HB, Bardin CW. Mechanisms of action of intrauterine devices. *Obstetrical & gynecological survey*. 1996 Dec;51(12 Suppl):S42-51. PubMed PMID: 8972502.
- Kaneshiro B, Aeby T. Long-term safety, efficacy, and patient acceptability of the intrauterine Copper T-380A contraceptive device. *International journal of women's health*. 2010 Aug 09;2:211-20. PubMed PMID: 21072313. Pubmed Central PMCID: 2971735.
- Grimes DA, Lopez LM, Schulz KF, Van Vliet HA, Stanwood NL. Immediate post-partum insertion of intrauterine devices. *The Cochrane database of systematic reviews*. 2010 May 12(5):CD003036. PubMed PMID: 20464722.
- studies Niop. Pakistan Demographic and Health Survey Islamabad: National institute of population studies; 2012-2013 [updated June 2013]. 1-42]. Available from: http://www.nips.org.pk/abstract_files/Priliminary%20Report%20Final.pdf.
- Raffat Sultana AJ, Anila Amjad. Immediate postpartum insertion of intrauterine device: An ideal method. *J SOGP* 2015;5(1):5.
- Suri V. Post placental insertion of intrauterine contraceptive device. *The Indian journal of medical research*. 2012 Sep;136(3):370-1. PubMed PMID: 23041730. Pubmed Central PMCID: 3510883.
- Hooda R, Mann S, Nanda S, Gupta A, More H, Bhutani J. Immediate Postpartum Intrauterine Contraceptive Device Insertions in Caesarean and Vaginal Deliveries: A Comparative Study of Follow-Up Outcomes. *International journal of reproductive medicine*. 2016;2016:7695847. PubMed PMID: 27631023. Pubmed Central PMCID: 5005603.
- Balsarkar GD, Nayak A. Postpartum IUCD: Rediscovering a Languishing Innovation. *Journal of obstetrics and gynaecology of India*. 2015 Jul;65(4):218-20. PubMed PMID: 26243985. Pubmed Central PMCID: 4518011.
- Anjum Afshan SSA. Immediate Postpartum IUCD insertion: An opportunity not to be missed. *Annals Abbasi Shaheed Hospital and Karachi Medical and Dental College*. 2013 June 2014;19(1):5.
- Eroglu K, Akkuzu G, Vural G, Dilbaz B, Akin A, Taskin L, et al. Comparison of efficacy and complications of IUD insertion in immediate postplacental/early postpartum period with interval period: 1 year follow-up. *Contraception*. 2006 Nov;74(5):376-81. PubMed PMID: 17046378.
- Shukla M, Qureshi S, Chandrawati. Post-placental intrauterine device insertion--a five year experience at a tertiary care centre in north India. *The Indian journal of medical research*. 2012 Sep;136(3):432-5. PubMed PMID: 23041736. Pubmed Central PMCID: 3510889.
- SZ Bhutta IB, Bano K. Insertion of intrauterine contraceptive device at cesarean section. *JCPSP*. 2011;21(9):4. 2011.
- Singal S, Bharti R, Dewan R, Divya, Dabral A, Batra A, et al. Clinical Outcome of Postplacental Copper T 380A Insertion in Women Delivering by Caesarean Section. *Journal of clinical and diagnostic research : JCDR*. 2014 Sep;8(9):OC01-4. PubMed PMID: 25386484. Pubmed Central PMCID: 4225936.
- Studies Niop. Pakistan Demographic and Health Survey Islamabad: National institute of population studies; 2017-2018. Available from: [Pakistan Demographic and Health Survey 2017-18 \[FR354\] \(dhsprogram.com\)](http://www.dhsprogram.com/PDF/FR35418.pdf).