

Evaluation of PPIUCD versus Interval IUCD Insertion

Sonil Srivastava¹, Imam Bano², Nazia Ishtat³

Abstract: **Background:** Post Partum IUCD has the benefits of providing highly effective contraception immediately after delivery, particularly in the country like India where women have limited access to healthcare and have the unmet need of family planning. These women contribute to one-third of 100 million married women in the developing world. **Aims and Objective:** To study safety, efficacy, side effects, complications & continuation of PPIUCD and to compare with Interval IUCD insertion. **Material and Methods:** A Prospective observational study was carried out in the Department of Obstetrics and Gynaecology, J.N.M.C.H, A.M.U., Aligarh. Participants were divided into two major groups. Postpartum IUCD insertion within 10 minutes of delivery of the placenta (Group I) and Interval IUCD insertion any time after 6 weeks of delivery (Group II). Follow-up of the participants was done at 6wks, 3mths and 6mths. **Results:** Menorrhagia, irregular bleeding and dysmenorrhoea was significantly less in PPIUCD insertion (7.2% v/s 21.9%; $p < 0.001$), (4.3% v/s 17.5%; $p < 0.001$) and (1.4% v/s 7.9%; $p < 0.001$) respectively. Pelvic infection and pain lower abdomen were also significantly less in PPIUCD insertion (1.1% v/s 5.3%; $p < 0.01$) and (2.9% v/s 12.2%; $p < 0.001$). Removal rate was significantly less in PPIUCD insertion (3.4% v/s 8.8%; $p < 0.05$). There was no significant difference in expulsion, continuation rate and satisfaction, though expulsion rate was slightly higher in PPIUCD. **Conclusion:** PPIUCD is an effective, safe, reliable, long-term and convenient method of contraception. Compared to Interval IUCD, PPIUCD have less side effects.

Keywords: PPIUCD, Interval IUCD, efficacy, safety and satisfaction

1. Introduction

Ensuring healthy timing and spacing of pregnancies is now considered the most important intervention for reproductive, maternal, neonatal, child and adolescent health (RMNCH+A) as 31 million out of 100 million married women throughout the developing world who have an unmet need of family planning live in India[1].

Intrauterine devices are the most cost effective long-acting reversible contraceptives. Reported failure rate of IUCD is 0.8 per 100 women at one year and at 10 year failure rate is comparable with that of female sterilisation (1.9 per 100 women over 10 years)[2]. According to ACOG, the ability of IUCD to prevent pregnancy is same as that of tubal sterilisation. FDA has approved the use of copper IUCD for up to 10 continuous years, during which it remains highly effective. As per WHO, IUCD decreases the risk of ectopic pregnancy by 50% as compared to women not using any type contraceptive.

The time of delivery offers a unique opportunity to address the need for contraception, especially for PPIUCD insertion. PPIUCD has the advantage of convenience, saves time and additional visit, no risk of uterine perforation because of the thick wall of uterus, reduced perception of initial side effects (bleeding and cramping), reduced chance of heavy bleeding, especially among lactational amenorrhoea method (LAM) users, no effect on amount or quality of breast milk. The woman has an effective method for contraception before discharge from the hospital. So PPIUCD appears an IDEAL METHOD for limiting & spacing births.

2. Material and Methods

The Prospective observational study was carried out in the Department of Obstetrics and Gynaecology, J.N.M.C.H, A.M.U., Aligarh between January 2013 to November 2015.

The subjects were recruited from OPD, Antenatal, post natal and those admitted in wards. Clients were divided into two major groups:

Group I: Participants willing for the Immediate Post Partum IUCD insertion within 10 minutes of Normal delivery and Caesarean section.

Group II: Interval IUCD insertion any time after 6 weeks of delivery.

Inclusion criteria:

Women willing for Copper T insertion and its follow up and meeting all the eligibility criteria for IUCD Insertion.

Exclusion criteria:

Women having signs & symptoms of chorioamnionitis or puerperal sepsis, prolonged rupture of membranes of >18hrs, extensive genital trauma, unresolved PPH, any abnormality of uterus or a large fibroid distorting its cavity, PID, malignant or benign trophoblastic disease and HIV/AIDS.

Protective device Cu IUCD 380 A was used in the study. Post partum vaginal insertions was done with Kelly forceps and intra-caesarean with sponge holding forceps. Interval insertions was done by withdrawal technique. Follow up of the participants was done at 6wks, 3mths and 6mths. Statistical analysis was done using chi square test.

3. Observations and Results

In this study total number of clients counseled for insertion of IUCD were 3,250. Out of these, 1360 (41.8%) clients accepted for IUCD insertion, out of this only 679 (49.9%) got actually inserted. 529 PPIUCD and 150 Interval IUCD were inserted.

Table 1: Socio Demographic Characteristics of the Participants.

Socio-demographic Characteristics	Group I (PPIUCD) (n=529)	Group II (Interval) (n=150)
Age (in yrs.)	% (No.)	%(No.)
20-25	3.5 (19)	1.3 (2)
25-30	52.9 (280)	25.3 (38)
30-35	37.8 (200)	41.3 (62)
35-40	5.6 (30)	32 (48)
Educational Status		
Literate	44.8 (237)	78 (117)
Illiterate	55.1 (292)	22 (33)
Religion		
Hindu	24.5 (130)	36 (54)
Muslim	75.4 (399)	64 (96)
Occupation		
Housewife	85.8(454)	76 (114)
Employed	14.17(75)	24 (36)
Residence		
Urban	81.1(429)	86.7 (130)
Rural	18.9(100)	13.3 (20)

Socio demographic characteristics of both group was comparable as shown in Table 1.

In PPIUCD group (Group I) 182 clients and in Interval group (Group II)36 clients lost to follow up.Those clients lost to follow up was excluded from study.

Table 2: Side Effects and Complications

Side effects and Complications	Group I (PPIUCD) (n=347)	GroupII (Interval) (n=114)	p value
	% (No)	%(No)	
Menorrhagia	7.2 (25)	21.9 (25)	<.001
Dysmenorrhoea	1.4 (5)	7.9 (9)	<.001
Irregular bleeding	4.3 (15)	17.5 (20)	<.001
Pelvic Infection	1.1 (4)	5.3 (6)	<.01
Pain Lower Abdomen	2.9 (10)	12.2 (14)	<.001
Expulsion rate	2.3 (8)	0.9 (1)	>.05

Compared to Interval insertions, PPIUCD insertions have less rate of menorrhagia , irregular bleeding ,pain lower abdomen, dysmenorrhoea , pelvic infection and removal rate. Expulsion rate was slightly higher in PPIUCD group. There was no case of perforation and pregnancy in both groups as shown in Table 2.

Table 3: Removal Rate, Continuation Rate And Satisfaction of Participants

Side effects and Complications	Group I (PPIUCD) (n=347)		Group II(Interval) (n=114)		p value
	12	3.4	10	8.8	
Removal rate	12	3.4	10	8.8	<.05
Continuation Rate	327	94.2	103	90.3	>.05
Complete Satisfaction	330	95.1	107	93.9	>.05

Removal rate was more in Interval IUCD insertion. Continuation rate and satisfaction was almost similar in both groups as shown in Table 3.

Table 4: Reason for Removal

Reasons for Removal	Group I(n=12) % (No.)	Group II(n=10) % (No.)
Menorrhagia	33.3(4)	40(4)
Irregular bleeding	33.3(4)	40(4)
Social reasons	33.3(4)	20(2)

4. Discussion

In our study menorrhagia was less in PPIUCD group compared to Interval group (7.2% v/s 21.9%; p < 0.001). Our study was comparable with study of **Gupta et al (2013)[3]** and **Neha et al(2015)[4]** where also menorrhagia was less in PPIUCD group, (3.3% v/s 5.3 %) and (5.8% v/s 18.2%) respectively. In our study pain lower abdomen was less in PPIUCD. **Gupta et al (2013)** and **Neha et al(2015)** observed that pain lower abdomen is almost similar in PPIUCD and Interval insertions (2.35% v/s 2%) and (2.9% v/s 2.3%) respectively. In our study 1.1% clients were diagnosed pelvic infection in PPIUCD and 5.3% was diagnosed pelvic infection in Interval insertion. Pelvic infection was less in PPIUCD. Our study was similar to **Gupta et al(2013)**, **Neha et al(2015)** were also infection was less in PPIUCD as compared to Interval (0% v/s 1.2%) and (0% v/s 4.5%) respectively. In our study expulsion rate in PPIUCD was 2.3% and in Interval insertion it was 0.9%. Expulsion rate was more in PPIUCD but the difference in groupI and group II was not significant (p>.05).

Our study was similar to studies by **Bonilla et al (2005)[5]**, **Bednarek PH et al (2011)[6]** and **Gupta et al (2013)** where expulsion rate was more in PPIUCD . **Lucksom et al (2015)[7]** observed more expulsion rate in Interval Insertions. In our study there was no case of pregnancy in both groups during 6months follow up. **Gupta et al (2013)**, **Neha et al(2015)** no case of pregnancy was found in 6 months in both groups. In our study there was no case of perforation in both groups. Our study was consistent with **Shah et al 2015[8]**, **Neha et al 2015** and **Gautam et al 2014[9]** were no case of perforation in PPIUCD insertion was reported. In our study 3.4 % removal rate in PPIUCD and 8.8% removal rate in Interval insertion.Removal rate was less in PPIUCD. Our study was similar to **Gupta et al (2013)** and **Lucksom (2015)** where removal rate was less in PPIUCD (5.66% v/s 6%) and (1% v/s 10.7%) respectively. In our study reason for removal in PPIUCD group was 33.3% due to menorrhagia, 33.3% due to irregular Bleeding and 33.3% due to social Reasons. Reason for removal in Interval group was due to menorrhagia 40%, irregular Bleeding 40%and social Reasons 20%.In **Gupta et al 2013** study 57.65% of total removal in PPIUCD was due to social reasons, 24.3% was due to bleeding ,11.8% for conception,6.25% for other contraceptive method. In Interval IUCD inertion 88.89% removal was due to bleeding and 11.1% due to pain/PID , 0% due to social reasons. In **Afshan et al (2014) [10]** study 71.4% of total removal in PPIUCD was due to bleeding, 28.6% was due to social reasons. In **Mishra et al (2014)[11]** study 32.56% of total removal in PPIUCD was due to bleeding ,25.58% due to social reasons,16.28% due to pain in abdomen .**Sunita et al (2014)[12]** reported psychological reason 52.48%, menstrual complaints 23.80% and persistent pelvic pain 9.52%.

5. Conclusion

It is concluded that PPIUCD is an effective, safe, reliable, long term and convenient method of contraception. Compared to Interval insertions PPIUCD has less rate of menorrhagia, irregular bleeding, pain lower abdomen, dysmenorrhoea and pelvic infection. Though expulsion rate was slightly higher in PPIUCD group, the benefits of providing highly effective contraception immediately after delivery, particularly in country like India which has high rates of unplanned pregnancy and short interval pregnancies in women having limited access to healthcare outweighs this disadvantage.

References

- [1] Vrijesh Tripathi, Deoki Nandan ,*Global Journal of Health Education and promotion of Reproductive Health* .(2006) An introduction to IUCD in India. Vol 9, No.1.
- [2] Hatcher RA ,Trussell j,Nelson AL,Cates W Jr,Stewart F,Kowal D, editors,Contraceptive technology .19 th revised New York:*ArdentMedia* :2007.
- [3] Gupta A, Verma A, Chauhan J. Evaluation of PPIUCD versus Interval IUCD (380A) insertion in a teaching hospital of Western U. P. *Int J Reprod Contracept Obstet Gynecol* 2013;2:204-8.
- [4] Neha Jain, Nishat Akhtar.A Study to Compare the Efficacy, Safety & Outcome of Immediate Postpartum Intrauterine Contraceptive Device (PPIUCD) With That of Delayed Insertion. *International Journal of Science and Research* .2015;Volume 4 Issue 2, 1388-1391.
- [5] Bonilla Rosales F, Aguilar Zamudio ME, Cazares Montero ML, Hernandez Ortiz ME, Luna Ruiz MA. Factors for expulsion of intrauterine device TCu380A applied immediately postpartum and after a delayed period. *Rev Méd Inst Mex Seguro Soc* 2005;43:5-10.
- [6] Paula H. Bednarek, M.D., M.P.H., Mitchell D. Creinin, M.D., Matthew F.Reeves, M.D., M.P.H., Carrie Cwiak, M.D., M.P.H., Eve Espey, M.D., M.P.H., and Jeffrey T. Jensen, M.D., M.P.H.Immediate versus Delayed IUD Insertion after Uterine Aspiration for the Post-Aspiration IUD Randomization (PAIR) Study Trial Group *N Engl J Med* 2011; 364 .2208-221
- [7] Pesona Grace Lucksom, Bikram Kishore Kanungo,Nikhil Sebastian,Rashi Melhotra,Dipika Pradhan,Reka Upadhyia. Comparitive study of Interval versus postpartum CuT insertion in a central referral hospital of North East India.*Int J Reprod Contracept Obstet Gynaecol*.2015 ;4(1):47-51.
- [8] Shah Nilesh,Hafsa Vora ,Ekta Ankola,Sudhir Amrutiya.Evaluation of Safety Efficacy and Expulsion of PPIUCD.*IJOR* .2015;Vol 4(6):537-539
- [9] Rajni Gautam, K. N. Arya, S. Kharakwal, Sudhir Singh, Monika Trivedi. overview of Immediate PPIUCD application in Bundelkhand Region. *Journal of Evolution of Medical and Dental Sciences* 2014; Vol. 3, Issue 36, August 18; Page: 9518-9526,DOI: 10.14260/jemds/2014/3230.
- [10] Anjum Afshan,Shabnam ShamimAsim.Immediate PPIUCD Insertion :An opportunity not to be missed 2014 Vol 19(1) PP 15-20
- [11]Mishra Nidhi,Dalal Neelesh,Joshi Vrunda .Intrauterine Device Insertion during Caesarean section IOSR-JDMS.2013;8(3),PP-21-23
- [12]Sunita Singhal, Rekha Bharti,Rupali Dewan, Divya, Anjali, Achla,Manjula, Pratima Clinical Outcome of
- [13]Postplcental Copper T 380 A Insertion in Women delivering by Caesarean section *jcdr* 2014 ;Vol8(9) :OC01-04.