Immediate Postpartum IUCD (PPIUCD) Insertion: An Opportunity Not to be Missed

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Abstract

Objective: The present study was planned to evaluate the safety and efficacy of immediate postpartum IUCD insertion in women delivering vaginally or by caesarean section.

Method: This prospective study was carried out at Sobhraj Maternity Hospital from 1st July 2012 to 30th June 2013. Women delivering in the hospital fulfilling inclusion criteria were included in the study. Women with prelabour rupture of membranes for >18 hours, chorioamnionitis, temperature >38^0 C during or after labour, continued excessive postpartum bleeding were excluded from the study. The women included in the study underwent immediate postpartum insertion of Copper T 380A after delivery of placenta in vaginal or caesarean delivery. These women were followed up at 6 weeks and 6 months after delivery.

Results: A total of 1238 women were included in the study who underwent immediate postpartum IUCD insertion. 56% of insertions were performed after vaginal delivery and 44% insertions were done at caesarean sections. The follow up rate at 6 weeks was 51% and 14% at 6 months. There were no serious complications associated with immediate postpartum IUCD insertion. The expulsion rate at 6 weeks and 6 months were 5% and 6%. The removal rate was 5% at 6 weeks and 10% at 6 months. The continuation rates were 90% at 6 weeks and 84% at 6 months respectively.

Conclusion: This study indicates that immediate PPIUCD insertion is safe and effective. However, the expulsion rate for immediate postpartum IUCD insertions are higher than for interval insertions, but the benefits of providing highly effective contraception immediately after delivery outweigh this disadvantage, particularly in country like ours where women have limited access to healthcare.

Keywords: Postpartum insertion, IUCD, contraception. (ASH & KMDC 19(1):15;2014).

Introduction

Traditionally postpartum birth control initiation has been delayed until the 6 week postpartum visit and women are discharged from the hospital with instructions to avoid sexual activity until 6 weeks postpartum. Pakistan has a very low contraceptive prevalence rate of 35%[1]. In our country delivery may be the only time when a healthy woman comes in contact with healthcare personnel, waiting until the 6 week postpartum visit to initiate a method of birth control puts women at risk for unintended pregnancy in this immediate postpartum period and majority does not even come for follow-up. Most women are sexually active by six weeks postpartum, and women who deliver by caesarean section may be more likely to resume sexual activity earlier than women who had vaginal deliveries[2,3,4]. Insertion of an intrauterine contraceptive device (IUCD) immediately after delivery has been recommended by World Health Organization (WHO), as one of the

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safe and effective methods of temporary contraception[5]. In the immediate post delivery period the women are highly motivated and need an effective method for contraception so that the child can be brought up with a relaxed mind without the worry of unintended pregnancy. On the other hand, if they are made to wait for 6 weeks for initiating an effective method for contraception, they may conceive accidentally or may not come for contraception[6]. This approach of immediate postpartum IUCD insertion is more applicable to our country where delivery may be the only time when a healthy woman comes in contact with healthcare personnel. Other advantages of insertion of an IUCD after delivery are that the discomfort related to interval insertion can be avoided and any bleeding from insertion will be disguised by lochia[7].

This study was conducted to evaluate the safety and efficacy of Immediate Postpartum Intra Uterine Contraceptive Device (PPIUCD) insertion in women delivering vaginally or by caesarean section. The evidence from this study in our local setup will help us to formulate recommendations and sensitize our healthcare providers to implement the aforementioned intervention in order to help us to achieve the millennium development goals.

Patients and Methods

This prospective study was carried out at Sobhraj Maternity Hospital from 1st July 2012 to 30th June 2013. Women delivering in the hospital fulfilling inclusion criteria were included in the study after obtaining informed consent. The study was approved by Ethical & Scientific Review Committee, Karachi Medical & Dental College.

To estimate the proportion of women for postpartum IUCD insertion in a year at Sobhraj Maternity Hospital where about 5000 deliveries take place in the hospital in a year, a random sample of 384 deliveries in any 12 month period was sufficient, with 95% confidence interval and 5% margin of error. However to make more observations available for further in-depth analysis and to estimate the efficacy, safety and continuation rate of PPIUCD, we decided to enroll all women who delivered in the hospital (both vaginally and by caesarean section) in last 12-month period from July 1, 2012 to June 30, 2013.

Inclusion criteria were all women delivering vaginally or by caesarean section, counseled for IUCD insertion in the antenatal period or in labour and willing to participate in the study. Exclusion criteria were women with prelabour rupture of membranes for >18 hours, chorioamnionitis,temperature >38^{0}C during or after labour, continued excessive postpartum bleeding.

The women included in the study underwent immediate postpartum insertion of Copper T 380A after delivery of placenta. The IUCD held by sponge holding forceps was introduced in the uterine cavity and placed at the fundus in the women delivering vaginally. In the case of caesarean section, IUCD was placed at the fundus in the uterine cavity through the lower segment incision. Uterine incision was closed routinely. At the time of discharge from the hospital, women were advised to come for follow up after 6 weeks and 6 months. At follow up visit, women were asked especially for history of expulsion of IUCD, excessive bleeding, pain or unusual vaginal discharge. Pelvic examination was performed; on per speculum examination if IUCD threads were long, they were cut 2 cm from external os. If threads of IUCD were not seen and there was no history of expulsion of IUCD, pelvic ultrasound was performed for confirmation of IUCD in place. All women who did not return for their 6 weeks and 6 months follow up visit were contacted by phone and reminded about their scheduled visit. For those who still did not come for visit; the follow up information was collected on phone.

Safety was assessed by incidence of perforation, infection, excessive bleeding, pain or unusual vaginal discharge. Efficacy was assessed by expulsion and unplanned pregnancy with IUCD inside. All the recorded data was entered into an electronic data base and SPSS version 18 was used to analyze the data. Frequencies and percentages were calculated to report the results.

Results

The total number of deliveries during the study period of twelve months was 4959. Out of these 1238 women were included in this study and underwent immediate postpartum IUCD insertion. Forty four percent (n=544) women had IUCD insertion during caesarean section while 56% (n=693) women had IUCD inserted vaginally within 10 min of delivery of placenta after vaginal delivery Fig.1.

Regarding the demographics (Table 1)majority of women were of age between 20 -29 years. Thirteen percent were primiparous and 87% were multiparous. Regarding ethnicity, majority i.e. 60% women were Urdu speaking, 8% Sindhi, 17% Baloch, 4.5% Pakhtoon, 8.5% Punjabi and 2% others. A significant number of women were illiterate (42.4%).The breakup of sample on the basis of cultural background may be helpful in developing promotion messages for PPIUCD in various cultural groups.

We collected the follow up information at 6 weeks and 6 months. At 6 weeks postpartum 35% (n=434) women came for follow up visit, those who did not come were contacted on phone and reminded of their scheduled visit. Of those contacted on phone, 16% (n=198) came for visit and in the rest (n=606) follow up information was collected on phone. At 6 months follow up visit only 5% (n=62) women came by themselves, the rest were contacted on phone. Nine percent (n=112) came for follow up visit and in the remaining (n=1064) follow up information was collected on phone.

Clinical outcomes are presented in Table 2. Regarding safety outcomes, there was no case of perforation and infection was minimal (0.2% at 6 months). However 224 women complained of irregular or heavy bleeding during menstruation. They were counseled that bleeding can be heavy during initial two or three menstrual cycles and were prescribed mefenamic acid and tranexamic acid. But 82 women were not willing to continue, therefore their IUCDs were removed. Regarding efficacy outcomes, there was no case of unplanned pregnancy with IUCD inside.

IUCD expulsion occurred in 6% women. Expulsion was confirmed on ultrasound. These women were informed about IUCD expulsion and were advised to use alternative methods of contraception.

In addition to spontaneous expulsion IUCD was removed for irregular/heavy bleeding in 6.6% women and for personal/social reasons in 2.1% women while 1.3% women discontinued IUCD use for planned pregnancy. The continuation rate at 6 weeks was 90% and at 6 months was 84%.

Discussion

During the postpartum time period women are often highly motivated to initiate contraceptive use[8,9]. Postpartum IUCD insertion is an opportunity not to be missed in developing countries like ours where delivery may be the only time when a healthy woman comes into contact with health care providers and the chances of returning for contraceptive advice are uncertain. It does not interfere with breastfeeding, is convenient for both women and their health care providers, is associated with less discomfort and fewer side effects than interval insertions and allows women to obtain safe, long-acting, highly effective contraception while already within the medical system[8].

Fig. 1: Immediate Postpartum IUCD (PPIUCD) Insertions in total births at Sobhraj Maternity Hospital from July 2012-June 2013

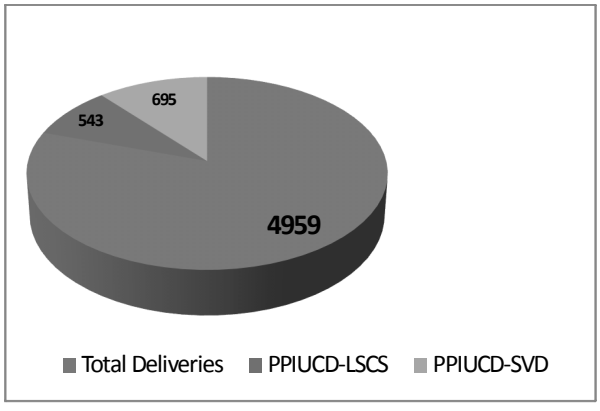

Table 2. Clinical Outcome of Immediate Postpartum IUCD Insertion (n=1238)*

	6 weeks n(%)	6 months n(%)
Expulsion	62 (5%)	75 (6%)
Perforation	0	0
Unplanned Pregnancy	0	0
Infection	11(0.9%)	3(0.2%)
Removal for		
Bleeding	45(3.6%)	82(6.6%)
Personal/Social Reasons	18(1.4%)	27(2.1%)
Planned Pregnancy	0	17(1.3%)
Continuation Rate	1113(90%)	1037(84%)

*Information was collected on follow up visit and for those who did not come for visit, information was collected on phone. Infection has been included in the continuation rate number and percentage.

Table 1: Demographics of the 1238 study participants who underw
Uterine Contraceptive Device insertion (PPIUCD)

Profile	No. of women
Age, years	
<20	13
20-29	774
>30	451
Parity	
Primiparous	160
Multiparous	1078
Ethnicity	
Urdu Speaking	743
Sindhi	100
Baluchi	210
Pakhtun	55
Punjabi	105
Others	25
Literacy Status	
Literate	713
Non literate	525

In this study we were able to successfully enroll 1238 women in one year. Ideally postpartum insertions should take place within 10 min of placental delivery (post placental application) or later till 48 h of delivery[8,10]. In the present study IUCD insertions were post placental (within 10 min of delivery of placenta) in women delivering vaginally or by caesarean section. In all studied women 75 had expulsion of IUCD and expulsion rate at the end of 6 months was 6%.This compares favorably with four multisite studies in the UN-POPIN report found that after six months, the cumulative expulsion rate was 9% for immediate postplacental insertion compared with 37% expulsions with insertions between 24 to 48 h after delivery[11]. In a study by Shukla et al from Lucknow, India reported 10.68% cumulative expulsion rate at the end of six months after post placental IUCD insertion[7]. Another study conducted in India reported 6.1% complete expulsion rate, the author concluded positively on postpartum insertion of IUCD especially in rural setting where women come to hospital only for delivery[12]. From Turkey Celen et al reported 11.3% cumulative expulsion rate for postpartum insertion of CuT 300B[9]. Thiery et al from Begium have reported 9.4% expulsion rate at six months for immediate post placental insertion[13]. Timing of insertion, counseling and provider training are important factors for IUCD insertion in postpartum period as quoted in United Nations Population Information Network (UNPOPIN) report. Of these the timing of insertion is important as it influences the risk of expulsion[11].

In the present study, there was no case of uterine perforation. A multisite trial found no instance of perforation or infection due to postpartum IUCD insertion, this is supported by other studies from India and Turkey[7,9,11]. Similarly there was no case of unplanned pregnancy with IUCD in the present study. This is consistent with earlier reports indicating very low rates of unplanned pregnancy[7,14].

Infection rate in this study was 0.2% at 6 months. A study conducted in 13 countries studied infection (PID) due to IUCD[15]. They have reported similar rate of infection with immediate insertion and interval insertion. In a trial conducted by Welkovic et al, they did not find any instance of infection due to post-partum IUCD insertion[16].

The main side effects of IUCD usage are prolonged or excessive bleeding and abdominal pain during menstruation. In the present study, the rate of removal due to bleeding was 6.6% as these women did not respond to mefenamic acid. In their study from India Shukla et al reported 27.2% women had menorrhagia[7].Out of these, IUCD had to be removed in 6% as they did not improve with mefenamic acid. Welkovic et al studied postpartum bleeding and infection after postplacental IUCD insertion, and found no difference in the incidence of excessive bleeding[16].

The continuation rate in this study at 6 weeks was 90% and at 6 months it was 84%. This compares favourably with 86% continuation rate at 6 months reported by Kittur S and Kabadi YM, 76% by Celen et al and 86% by Zhou et al.[17,9,18]. It appears that immediate postpartum IUCD insertion is safe, convenient, cost effective, and reversible long term birth spacing method which should be part of maternal/newborn/reproductive health package in developing countries.

The 51% follow up rate at 6 weeks postpartum in this study further underscores the need to provide women effective contraception before they are discharged from hospital following a delivery. By delaying birth control initiation until the 6 week postpartum visit, the most vulnerable women, those who are the least likely to return for their 6-week postpartum visit, are being placed at increased risk for unintended pregnancies and short pregnancy interval.

The limitation of this study was low follow up rate, as significant number of patients had to be followed on phone, this limits our ability to accurately estimate the IUCD expulsion rate and accurate continuation rate at long term.

In Pakistan, postpartum IUCD insertion is only in the initial phase of introduction at few centers in the country. The National Committee for Maternal & Neonatal Health (NCMNH) is promoting awareness

and has implemented postpartum IUCD insertion at two tertiary hospitals in Karachi, Pakistan[19,20]. We hope that the results from this study and the ongoing projects by NCMNH will have a valuable impact on the postpartum IUCD use in Pakistan at mass scale.

Conclusion

Overall, immediate post partum insertion of IUCD appears safe and effective. This study suggests that immediate post placental insertion of IUCD is an effective, useful, safe and convenient opportunity which should not be missed in countries like ours with high rates of unplanned and short interval pregnancies in women with limited exposure to healthcare providers.

References

1. National Institute of Population Studies [Pakistan]. Pakistan Demographic and Health Survey 2012-13 [Internet]. National Institute of Population Studies Pakistan; 2013. Available from: http://www.nips.org.pk/abstract_files/PDHS%20Final%20Report%20as%20of%20Jan%2022-2014.pdf.
2. Speroff L, Mishell DR. The postpartum visit: its time for a change in order to optimally initiate contraception. Contraception 2008;78:90-8.
3. Barrett G, Peacock J, Victor CR, Manyonda I. Caesarean section and postnatal sexual health. Birth 2005;32:306-11.
4. Khajehei M, Ziyadiou S, Safari RM, Tabatabaee H, Kashefi F. A comparison of sexual outcomes in primiparous women experiencing vaginal and caesarean births. Indian J Community Med 2009;34:126-30.
5. World Health Organization. Medical eligibility criteria for contraceptive use [Internet]. Geneva: World Health Organization; 2010. Available from: http://www.who.int/reproductivehealth/publications/family_planning/9789241563888/en/.
6. Suri V. Postplacental insertion of intrauterine contraceptive device. Indian J Med Res 2012;136:370-1.
7. Shukla M, Qureshi S, Chandrawati. Postplacental intrauterine device insertion -- A five year experience at a tertiary care centre in north India. Indian J Med Res 2012;136:432-5.
8. Kapp N, Curtis KM. Intrauterine device insertion during the postpartum period: a systematic review. Contraception 2009;80:327-36.
9. Celen S, Moroy P, Sucak A, Aktulay A, Danisman A. Clinical outcomes of early postplacental insertions of intrauterine contraceptive devices. Contraception 2004;69:279-82.
10. Postpartum IUCD reference manual. New Delhi: Family Planning Division , Ministry of Health and Family Welfare, Government of India; 2010.
11. United Nations Population information network (POPIN), UN Population Division, Department of Economic and Social Affairs with support from UN Population Fund. Network Intrauterine devices. Family Health International. Winter 1996;16:4.
12. Sofat R. Postpartum Cu T insertion -- a trial. Indian J Materna Child Health 1990;1:23-4.
13. Thiery M, Van Kets H, Van der Pas H, Van Os W, Dombrowiez N. The ML Cu 250; clinical experience in Belgium and Netherlands. Br J Obstet Gynecol 1982;89:51-3.
14. Kuliier R, O'Brien PA, Helmerhost FM, Usher-Patel M, D'Arcangues C. Copper containing, framed intrauterine devices for contraception. Cochrane Database Syst Rev 2007;17:CD005347.
15. Lopez, Grimes,Szpir (Family health international/ CRTU programme). Immediate Postpartum insertion of an IUD is safe & effective. Global health technical briefs [Internet]. USA: United States Agency for International Development and Family Health International ; 2007.
16. Welkovic S, Costa LO, Faundes A, de Alencar Ximenes R, Costa CF. Postpartum bleeding and infection after postplacental IUD insertion. Contraception 2001;63:155-8.
17. Kittur S, Kabadi YM. Enhancing contraceptive usage by postplacental intrauterine contraceptive devices (PPIUCD) insertion with evaluation of safety, efficacy and expulsion. Int J Reprod Contracept Obstet Gynecol 2012;1:26-32.
18. Zhou SW, Chi IC. Immediate postpartum IUD insertions in a Chinese hospital -- a two year follow up. Inernat J Gynecol Obstet 1991;35:157-64.
19. Laila Shah. Institutionalization of PPIUCD insertion 2013 [Internet]. National Committee for Maternal and Neonatal Health. Available from: http://www.k4health.org. Accessed on May 18, 2014.
20. Introduction-PPIUCD 2014 [Internet]. National Committee for Maternal & Neonatal Health. Availabe from: http://www.ncmnh.org.pk. Accessed on May 18, 2014.