Mothers' Experiences with Postpartum Intrauterine Contraceptive Devices at the Mother and Child Hospital, Ondo, Southwest Nigeria

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Abstract

Background: *The high fertility rate and unmet need for contraception are partly responsible for the high maternal mortality ratio in Nigeria. The intrauterine contraceptive devices are among the safest and most effective methods available.*

Objective: *This study aimed to evaluate the complications and side effects of postpartum intrauterine contraceptive device insertions in a busy maternity centre.*

Methods: *This prospective observational study was conducted from 1st July 2013 to 30th June 2014 at the Mother and Child Hospital Ondo, Ondo State, South West Nigeria. Inclusion criteria were married multiparae with at least one previous vaginal delivery who gave consent for insertion. The intrauterine contraceptive devices were inserted from 10 minutes up to 48 hours after delivery. The women were reevaluated 3 months after for complications and side effects (perforation, abnormal vaginal bleeding/discharge and missing device). The results were entered into an Excel spreadsheet and analysed.*

Results: *The number of women counseled for postpartum intrauterine contraceptive devices in the period of study was 350. One hundred of them were enrolled for insertion out of the 103 that consented accounting for 29.4%. The mean age was 33.0 ±4.9 years. Sixty-five women were grand-multiparous and 85 attained secondary education. Only 34 participants complied with reevaluation visits. Six women (17.6%) complained of heavier menstrual flow while only one (2.9%) requested for removal due to spousal discomfiture.*

Conclusion: *Postpartum intrauterine contraceptive device insertions were found to be safe and tolerable. They are recommended for other maternity centres offering family planning services.*

Keywords: Family planning, contraception, postpartum, intrauterine contraceptive device

Introduction:

Globally, an estimated 303,000 maternal deaths occurred in 2015, a decline of 43% from levels in 1990.[1] Developing countries accounted for 99% (302,000 maternal deaths) with Nigeria carrying the heaviest burden with 58,000 (19%).[1]

In 1987, the Safe Motherhood Initiative, a global campaign to reduce maternal mortality, identified family planning as one of four strategies with ante-natal care, safe delivery, and postnatal care to reduce maternal mortalities in developing countries.[2] The 1994 International Conference on Population and Development, held in Cairo, reiterated the importance of contraception.[3]

Family planning directly reduces the number of maternal deaths by lowering the chance of

pregnancy and the associated complications (exposure reduction), risk of having an unsafe abortion (vulnerability reduction) as well as delaying first pregnancy in young women who might have premature pelvic development.[4] Contraceptives also improve child survival by lengthening birth intervals, thereby reducing sibling competition for scarce family and maternal resources.[5]

In Nigeria, the total fertility rate was quoted as 5.5 per woman while the unmet need for contraception was 16% among married women.[6] The high fertility rate and unmet need for contraception are partly responsible for the high maternal mortality ratio in the country.[7] Previous studies indicated that contraceptive prevalence was 12% among Nigerian women as at 1995.[8] A more recent survey, however, put it as 15% by 2013.[6]

The modern intrauterine contraceptive devices (IUCDs) of which the CuT380A (Pregna International Ltd, Mumbai) is a prototype are among the safest and most effective long acting reversible contraceptive (LARC) methods available.[9] They are particularly suitable for women in developing countries as they are affordable, convenient, coitus independent and do not require re-supply visits.[9] In addition, a Pearl index i.e. number of unintended pregnancies in 100-women-years of exposure is a favourable 0.83.[9] Globally, the use of intrauterine contraceptive devices range from less than 2% to above 40% with Asian countries (mostly China) accounting for more than 80%.[10] The prevalence among married Nigerian women is, however, just 1.1%.[6]

In many facilities in Nigeria, family planning is not initiated until the 6th week postnatal visit. The postpartum period, however, is potentially an ideal time to offer contraception services as women and their spouses are well motivated and more receptive having just (more often than not) experienced a safe delivery. The postpartum insertion of an IUCD also provides a convenient opportunity to deliver family planning services to patients before they leave the facility particularly in Nigeria where access is often limited and compliance to follow-up visits is poor. This study aimed to evaluate the complications and side effects (perforation, abnormal vaginal bleeding or discharge and missing device) of postpartum intrauterine contraceptive device insertions among patients.

Materials and Methods:

This prospective observational study was conducted at the Mother and Child Hospital Ondo City (MCHO) in Ondo State, Nigeria over a 12-month period from 1st July 2013 to 30th June 2014. The sample size was calculated with a margin of error of 5% and 95% confidence interval for studies of the target population, which is minimum 217.[11] For this study, 350 patients were selected by purposive sampling method and counseled for postpartum intrauterine contraceptive device (PPIUCD) insertion, out of which 100 consecutive parturients were eventually enrolled and observed. The study hospital is a purpose-built tertiary care facility which offered free maternity services including consultations, admissions, drugs, laboratory tests, blood transfusions, surgeries and family planning. In line with the facility protocol, the components of pre-insertion counseling involved rapport building, exploring options, decision making and its implementation. Post-insertion counseling had added components of ensuring correct usage and method satisfaction. Ethical approval for the study was obtained from the institutional ethics committee.

Inclusion criteria were married women with at least one previous vaginal delivery who gave consent, either during the antenatal period, on admission in labour or postnatal ward, for insertion of IUCD as a family planning method following a normal vaginal delivery. Women with history of prolonged rupture of membranes, features of genital infections and postpartum haemorrhage were excluded in this study. Those with previous caesarean sections were also excluded to eliminate the theoretical risk of perforations through the uterine scar during insertion. The Cu-T380A devices were inserted in the labour ward prior to the women's discharge, from 10 minutes up to 48 hours after delivery.

Once the criteria for the procedure were met, the mother was placed in lithotomy position and

palpated to ascertain uterine size as well as ensure tonicity. The external genital area was then cleaned and sterile draped under a good light source. The cervix was visualised with introduction of a Graves or Cusco's vaginal speculum and lochia flow cleaned out to maximise exposure. The anterior lip of the cervix was then grasped gently with ring forceps and another pair of forceps holding the IUCD by its vertical arm aligned with the strings (to ensure proper placement and decrease the risk of a pull out when removing the forceps) was introduced through the external os, while avoiding contact with the vaginal walls. The IUCD-holding pair of forceps was then moved upwardly towards the fundus while stabilising the latter per abdomen. The forceps was subsequently released slowly and gently withdrawn from the uterine cavity and vagina following which the cervix was inspected to verify that the strings were not readily visible as an indication that the IUCD was placed correctly. Finally, the cervix-holding forceps and speculum were removed one after the other and patient cleaned up. The insertions were done by the researchers and resident doctors, all of whom had undergone training in the procedure spearheaded by the lead researcher who is an experienced consultant obstetrician and gynaecologist. The women were then to be contacted and reevaluated at the post-natal clinic after 3 months for complications and safety. A check ultrasound scan to confirm intrauterine placement was done for each returnee at no cost to the patient, in line with the hospital policy. For this study, pelvic examination to visualise the IUCD strings was de-emphasised as it was deemed intrusive and unnecessary. The quantitative data were entered into an Excel spreadsheet and analyzed using simple frequency tables while that of qualitative data were by descriptive deductions.

Results:

The total number of deliveries in the 12-month period of study was 3,158, including 350 women that were counseled for postpartum contraception. One hundred consecutive parturients were eventually enrolled for this study out of the 103 that consented to IUCD insertion, accounting for 29.4% (Figure 1). The mean age was 33.03 ±4.9 years with a range of 21 to 50 years. Majority of the women were grand-multiparous (65%) and attained minimum secondary level of education (85%). Details of the socio-demographic characteristics are illustrated in Table 1.

Table 1. Socio-Demographic Characteristics of Participants (N = 100)

Variable	*Category*	*Frequency (%)*
Age(Years)	21-25	4 (4.0)
	26-30	27 (27.0)
	31-35	30 (30.0)
	36-40	34 (34.0)
	>40	3 (3.0)
	Unknown	2 (2.0)
Parity	2	5 (5.0)
	3	10 (10.0)
	4	20 (20.0)
	5	44 (44.0)
	6	9 (9.0)
	7	7 (7.0)
	8	4 (4.0)
	9	1 (1.0)
Level of Education	None	3 (3.0)
	Primary	12 (12.0)
	Secondary	54 (54.0)
	Tertiary	31 (31.0)

Sixty-two of the 100 participants were contacted on phone, interviewed and encouraged to attend the 3-month follow-up post-natal clinic but only 34 eventually turned up (Figure 1).

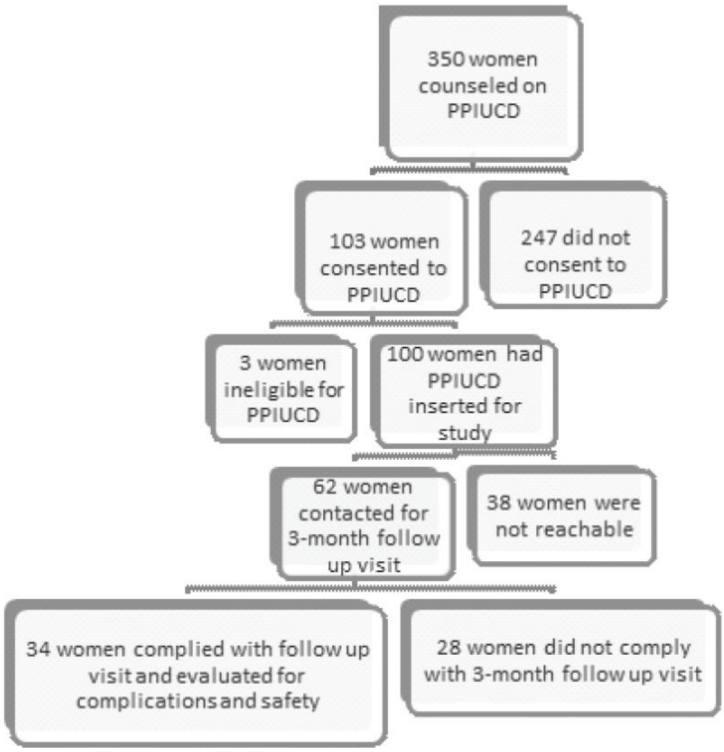

Figure 1: Patient Flow Diagram

All returnees still had the IUCD in-situ as demonstrated on pelvic ultrasound scan. Six patients out of 10 (60%) that had started menstruating complained of heavier menstrual flow. Twenty-two patients had recommenced intercourse out of which one requested for removal because of spousal discomfiture, giving a discontinuation rate of 2.9% among returnees. These are summarised in Table 2.

Table 2. Complications among Participants at Follow-up Clinic (N = 34)

Complications	***Frequency (%)***
None	27 (79.4)
Heavy menstrual flow	6 (17.7)
Coital difficulty	1 (2.9)

Discussion:

The initial acceptability rate for the use of postpartum IUCD among 350 counseled parturients in this study was 29.4%. This figure is much lower than 41% for a similar multi-centre study in private hospitals in south east Nigeria.[12] A different study profiling IUCD acceptors in southern part of Nigeria showed an acceptability rate of 39.7%.[13] These wide disparities may be explained by the fact that postpartum contraception was a novel method to women at the study centre, hence their reluctance to embrace it. This study group's demographic characteristics are similar to those conducted in Enugu State, Nigeria though majority of patients in that particular cohort were of parities 2 – 4 (84%).[14]

In this study, the compliance rate at the 3-month follow-up clinic was 34%. From telephone interviews, 28 women defaulted because they had no complaints, were too busy or had relocated. The remaining 38 were simply unreachable. This low compliance as well as the restrictive timeline for follow-up evaluation was a limitation of this study. This implies that inferences could not be confidently drawn for the long term continued use and safety of PPIUCD insertions. The assumption on one hand, however, was that those non-compliant women really had no complaints about the IUCDs inserted; otherwise they would have showed up. In addition, it was unlikely they went elsewhere for follow-up because the MCHO was the premier referral centre offering free services among the target population. The immediate postpartum period may therefore, be the last opportunity for healthcare professionals to interphase with mothers and their spouses before subsequent pregnancies. This is in fact a major advantage of PPIUCD insertion. Two Indian studies on PPIUCD recipients showed much better compliance rates at the three and six months follow-up visits ranging from 85% to 94%.[15,16] The disparity might simply reflect the difference in attitude to hospital visits between the two cultures.

In terms of complications, majority of the returnees had none (79.4%). The commonest complaint was heavier menstrual flow that required no treatment. Pre-emptively, all patients in this study were counseled on the probability of menorrhagia which might have prepared their minds from the outset. In the similarly conducted Indian studies, majority of PPIUCD recipients followed up between six weeks and six months also had no complaints while menorrhagia was the commonest among those who did.[15,16] Other documented complaints in those studies were pelvic pain, irregular vaginal spotting and infection. The patients followed up in this study had no such additional issues. A study comparing PPIUCD insertions following caesarean and vaginal deliveries also identified menorrhagia as a major complaint.[17]

The discontinuation rate among returnees in this study was 2.9% as only one patient requested for removal due to her spouse's coital discomfiture. This low rate though derived from a minority of the sampled population is promising. It was much lower than those in the south-east Nigerian (9.9%)[14] and two Indian (13.5%)[16], (4.1%)[17] studies.

None of the patients followed up in this study had an IUCD perforation or expulsion. Each was confirmed in situ with a check pelvic ultrasound scan. This finding contrasted similar studies with documentation of expulsions in a minority of cases.[12,14-17] A systematic review revealed that delaying postpartum IUCD insertion beyond 10 minutes up to 72 hours was associated with higher risk of expulsion compared to immediate insertion within 10 minutes.[18] The same review showed a higher risk with the latter when compared to interval insertion (beyond six weeks postpartum). These findings could not be corroborated in this study as all the insertions were done from 10 minutes to 48 hours postpartum.

In conclusion, postpartum intrauterine contraceptive device insertion was safe and tolerable as a reversible method. Low discontinuation rates might have been associated with adequate counseling and timely insertions by providers. It is therefore recommended that larger sample size studies over a longer follow-up period be conducted to corroborate these findings. This is with a view to advocating the use of the contraceptive method in more maternity centres in Nigeria.

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