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Tolerability of The Copper- T Intrauterine Device by Acceptors at Jos University Teaching Hospital, Jos, North-Central Nigeria

A. G. Ohihoin[1,2], J. T. Mutihir[2], I. A. O. Ujah[2], E. N. Ohihoin[2,3], E. C. Herbertson[1*] and O. C. Ezechi[1]

[1]Nigerian Institute of Medical Research, 6 Edmund Crescent, Yaba, Nigeria.
[2]Jos University Teaching Hospital (JUTH), Jos, Nigeria.
[3]HICI Healthcare Limited, Ikoyi, Lagos, Nigeria.

Authors' contributions

This work was carried out in collaboration between all authors. Author AGO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors JTM and IAOU critically reviewed the work for scientific content. Authors ENO and OCE managed the analyses of the study. Author ECH managed the literature searches and prepared manuscript for final publication. All authors read and approved the final manuscript.

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ABSTRACT

Background: The Copper-T (Cu-T) Intrauterine device (IUD) is one of the oldest and most reliable forms of contraception. Its widespread use has been limited by side effects, such as heavy menstrual flow and pain on insertion. Findings suggest that the intrauterine device acts more as a contraceptive than an abortifacient, thus improving its acceptability.
Objectives: To determine the proportion of women using Cu-T IUD, who will develop side effects during the study period; Outline experienced side effects of Cu-T; and ascertain the discontinuation

**Corresponding author: E-mail: ebiereh@yahoo.com;*

rate and reasons for removal.
Methods: The intrauterine device used for this study is Copper T380A.
A descriptive cohort study, of women using Cu-T IUD at the Jos University Teaching Hospital, North Central Nigeria. A structured proforma was used to extract data from family planning records. Study duration was one year. (Jan-Dec 2007).
Results: A total of 103 women participated in the study. The average age of the respondents was 30.75 ± 5.90 years, with a range of 20-47 years. Only a few (17.5%) of the respondents had side effects or complications, The commonest side effect was vaginal discharge and abnormal cessation of menstrual flow (5.8%) respectively. Other side effects documented were painful period (2.9%) and abdominal pain (1%). Only 5.8% (n=6) discontinued the Cu-T IUD, due to side effects. The commonest reason for discontinuation was abdominal pain, 1.97% (n=2), although only one client had initially reported abdominal pain as an adverse effect. There was a significant relationship between development of side effects and discontinuation. ($p < 0.01$).
Conclusion: Only a few of the women using Cu-T IUD developed side effects, and discontinuation rate was quite low. Patients who discontinued usage did so because of side effects and husband's request. Limitations of this study include the short duration of follow up.
Public health education should be done to enlighten Nigerian women on this method of contraception which seems quite tolerable and reliable, with the aim of increasing its uptake.

Keywords: Copper-T; Intra-Uterine Device; contraceptive.

1. INTRODUCTION

The Copper-T (Cu-T) Intra-Uterine Device (IUD) is one of the oldest and most reliable forms of contraception. Findings suggest that the intrauterine device acts more as a contraceptive rather than an abortifacient, thus improving its acceptability [1]. The high effectiveness of intra-uterine contraceptive device is shown in a global cumulative pregnancy rate of less than 2% at 5 years [2]. With particular reference to the Cu T IUD, failure rates of less than 2 per 100 woman years have been documented [3]. Copper-T provides long-lasting (as long as twelve years) and highly effective contraception [2]. Other advantages include relative affordability, it does not interrupt the process of sexual intercourse and hormonal side effects are eliminated since it does not contain hormones [2,4]. Despite the advantages of using the CU-T intra-uterine device, its widespread use have been limited by reported side effects, such as heavy menstrual flow and pain on insertion [5,6]. Nulliparous women have been shown to exhibit peculiar side-effects that include increased bleeding, higher expulsion rates and subsequent removal [7,8]. Overall compliance with the use of the CU -T intra-uterine device has generally been shown to be good [9]. The extent to which development of side effects has led to discontinuation of usage is an area that needs further exploration, thus necessitating this study. This study sought to determine the proportion of women using Cu-T IUD who developed side effects; to outline experienced side effects of Cu-T; And to ascertain the discontinuation rate and reasons for removal.

2. MATERIALS AND METHODS

2.1 Study Site

The study site was University of Jos Teaching Hospital, Jos. Jos, the capital city of Plateau State, is a town situated in the North-central part of Nigeria.

2.2 Methods

The intrauterine device used for this study is Copper T380A.

A descriptive cohort study of women using Cu T-IUD at the Family planning clinic of Jos University Teaching Hospital.

Patients who present to the Family planning clinic of Jos University Teaching Hospital go through a process of counselling on the various options available for contraception. The merits and demerits of all the methods are discussed with them and they are allowed to ask questions.

When all questions have been exhausted, the patient then decides on a method and completes a proforma for that particular method before the method is administered.

Every patient who chose Cu-T IUD at the family planning clinic (January to June 2007) and gave

informed consent, was enrolled into the study, and followed up till December 2007. Total number of study participants was 103.

A structured proforma was used to extract variables such as biodata, Cu-T insertion date, patients' complains at follow-up appointments (including, adverse effects); Request for removal of Cu-T and reason for the request and removal date from the family planning register.

2.3 Statistical Analysis

Statistical analysis (descriptive statistics and chi square test for association) was carried out using SPSS version 20.

Informed consent was obtained from participants after they had studied the information sheet provided. Literate participants signed while illiterate participants thumb-printed in the presence of a witness after explanation of the study in their local dialects. Participants who were not interested in reading the participant's information and participate were excluded from the study but this did not affect the quality of family planning services they received.

Ethical approval for the study was obtained from the Ethics Review Committee of Faculty of Medical Sciences, University of Jos. Administrative approval was obtained from the University of Jos Teaching Hospital.

3. RESULTS

The average age of the respondents was 30.75 ± 5.90 years, with a range of 20-47 years (Table 1). Only 17.5% (n=18) of the respondents suffered side effects or complications (Table 2). The commonest adverse effect was vaginal discharge seen in 5.8% (n=6) of the respondents; and abnormal cessation of menstrual flow which occurred in 5.8% (n=6) of the patients. Other adverse effects documented are abdominal pain 1.0% (n=1), inter-menstrual bleeding 1.0% (n=1) and Heavy menstrual bleeding 1.0% (n=1). Only 5.8% (n=6) discontinued the Cu –T IUD due to adverse effects. The commonest reason for discontinuation (Table 3) was abdominal pain 1.9% (n=2) and husband's request 1.9% (n=2). There was no relationship between, age of respondents and development of side effects (p=0.13) but there was a significant relationship between discontinuation and development of side effects (p <0.01).

Table 1. Demographic characteristics of respondents

Age	**% (n)**
20 – 30	57.28 (59)
31 – 40	37.87 (39)
41 – 50	4.85 (5)
Total	100.00 (103)
Parity	**% (n)**
0	4.85 (5)
1 - 3	50.49(52)
4 – 6	36.89 (38)
7 – 9	7.77 (8)
Total	100 (103)

Table 2. Types of complications developed by clients while on Cu-T IUD

Adverse effects/complications	**% (n)**
Abdominal pain	0.98 (1)
Inter menstrual bleeding	0.98 (1)
Heavy menstrual bleeding	0.98 (1)
Painful menstruation	2.91 (3)
Abnormal cessation of menstrual flow	5.83 (6)
Vaginal discharge	5.83 (6)
None	82.52 (85)
Total	100 (103)

Table 3. Reasons for removal of IUD and continuation

Reason	**% (n)**
Infection	0.97 (1)
Wants a baby	0.97 (1)
Abdominal pain	1.94 (2)
Husband request	1.94 (2)
Continuation rate	94.17 (97)
Total	100 (103)

4. DISCUSSION

This study has shown that most of the acceptors of the CU- T Intrauterine contraceptive device will not develop side effects or complications. This method of contraception also showed a good spread of usage among women within the reproductive age group as reflected by age ranging from 20 years to 47 years.

This spread of usage within a broad age range is a testament of the fact that the CU-T IUD is well accepted across various age range and thus debunking the "myth" that the IUD is not a preferred method by younger women of low parity. As a matter of fact, majority of women fall within the 20-30 age group reflecting 57% of

respondents and the other 43% within the 31-50 age group. This is a good balance of spread within the age range. There is also no relationship between the age of the respondents and the development of side-effect. It was thought that younger nulliparous patients tend to have more side effects and higher rate of expulsion [10]. This however has not been supported by this study.

This study showed that parity did not influence acceptance of the Cu- T IUD as 55.4% of respondents fall within the parity of 0-3. The others are distributed within a parity range of 4-7. This further buttress the suggestion that women of varied age range and parity will accept the use of the Cu-T IUD as against the usual stereotype that acceptors of the intrauterine contraceptive device will be women of high parity tending towards the later part of their reproductive life. Women of varied ages and parity can thus safely use intrauterine contraceptive device. This view is also supported by Speroff & Darney [11,12]. In spite of the low proportion of women in the study who developed side effects or complication, a further lower portion (5.8%) of overall users actually discontinued the method of contraception out of this, only 2.9% requested IUD removal because of side effect. This finding further supports the fact that most of the documented side effects were actually tolerable by the acceptors of this method of contraception [3]. Other reasons for removal were due to the request of the husband and desire to conceive. The instrument used did not probe further to know why the husbands requested removal of IUD.

Abnormal uterine bleeding has been known to account for a major reason for removal of the CU -T IUD [13]. This was not observed in this study as abnormal uterine bleeding as a side-effect was seen in only 2% of the respondents. It is also interesting to note that vaginal discharge and abnormal cessation of menstrual flow were respectively seen as an adverse effect in 5.8% of the respondents as the commonest side effects but did not influence request for removal of IUD. This finding negates the expectation that abnormal uterine bleeding is the commonest side effect seen in acceptors of CU-T IUD as demonstrated by one study [14]. The possible explanation could be that most cases of abnormal uterine bleeding demonstrated in acceptors of CU-T IUD may actually be linked to other causes of abnormal uterine bleeding rather than the Cu –T IUD.

5. CONCLUSION

Majority of the women using Cu T IUD did not develop side effects, and discontinuation rate was quite low. Public health education should be done to encourage uptake of this method of contraception since acceptability and tolerability of this method of contraception appears to be quite favourable. This can ultimately lead to the reduction of the high unmet need for contraception observed in Nigeria.

6. LIMITATION OF STUDY

The major limitation of this study is the small sample size, findings from this study will therefore require further studies with a larger sample size to corroborate or refute.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Ortiz ME, Croxatto HB. Copper-T intrauterine device and levonorgestrel intrauterine system: Biological bases of their mechanism of action. Contraception. 2007;5(6):S16-S30.
2. Thonneau PF, Almont EA. Contraceptive efficacy of Intra-uterine contraceptive devices. American Journal of Obstetrics and Gynecology. 2008;198(3):248-253.
3. 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;2:211–220.
4. Grimes DA. Intrauterine devices (IUDs). In RA Hatcher, et al. (eds), Contraceptive

Technology, 19th ed, New York: Ardent Media. 2007;117–143.

5. Dean G, Schwarz EB. Intrauterine contraceptives (IUCs). In RA Hatcher, et al. (eds). Contraceptive Technology, revised 20th ed, New York: Ardent Media. 2011;147-191.
6. Trussell J, Guthrie KA. Choosing a contraceptive: Efficacy, safety and personal considerations. In RA Hatcher, et al. eds. Contraceptive Technology, 20th ed., New York: Ardent Media. 2011;45-47.
7. Hubacher D. Copper intrauterine device use by nulliparous women-A review of side effects. Contraception. 2007;75(6):8-11.
8. Celen S, Moroy P, Sucak A, Aktulay A, Danisman M. Clinical outcomes of early Post-placental insertion of intra-uterine contraceptive device. Contraception. 2004; 69(4):279-282.
9. Malik R, Sangwan V, Nanda S, Kumar V, Kumar M. Discontinuation pattern among IUCD users: A study at tertiary health care centre. Journal of South Asian Federation of Obstetrics and Gynaecology. 2014; 6(1):8-10.
10. Kulier R, O'Brien PA, Helmerhorst FM, Usher-Patel M, D' Arcangues C. Copper containing, framed intra-uterine devices for contraception. Cochrane Database System Review. 2007;(4):CD005347.
11. Speroff L, Darney PD. A clinical guide for contraception, 3rd ed. Philadelphia. Lippincott Williams and Wilkins. 2001; 66-99.
12. Speroff L, Darney PD. Intrauterine contraception. In A clinical guide for contraception, 5th ed, Philadelphia. Lippincott Williams and Wilkins. 2011; 239–279.
13. Hubacher D, Reyes V, Lillo S, Pierre-Louis B, Chen P, Croxatto H. Preventing copper device removal due to Side effects among first-time users. Randomized trial to study the effect of prophylactic ibuprofen. Human Reproduction. 2006;21(6):1467-147.
14. Hubacher D, Chen P, Park S. Side-Effects from Copper IUD: Do they decrease over time? Contraceptive Technology. 2009; 79(5):356-362.

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