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ORIGINAL RESEARCH PAPER

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5 YEARS STUDY OF COPPER T INTRAUTERINE DEVICES IN A TERTIARY CARE HOSPITAL

KEY WORDS: copper T380A, contraception, request for removal

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ABSTRACT

Background: Unmet need of contraception is an ongoing global concern. The intrauterine devices (IUCDs) are widely used contraceptive methods all over the world today. They are effective and recommended for use up to 10 years. They are not without side effects, which often prompt the users to request for removal.

Objective: To determine the utilization rate of copper T intrauterine contraceptive device (IUCD), side effects, and request for removal at the Family Planning Clinic of JANANA HOSPITAL of J.L.N Medical college Ajmer, Rajasthan.

Methods: The study background is a tertiary health care facility .. Different methods of Contraception methods provided in the institution between april 2015 to march 2020 was taken into account. The records of usage of IUCD during same period were carefully studied.

Results: A total of 20,154 users were provided with various forms of contraceptives during the period under review (APRIL 20015–MARCH 2020) in this center. IUCD was the commonest form of contraception used at the Family Planning Unit with a rate of 7,344(36.43%). There was a yearly higher request for IUCD over other forms of contraceptives. Of a total of 7,344 users of the copper T IUD method over the period, 3462(47.14%) belonged to the age group of 20–24 years. Eleven (4.61%) of the users requested for its removal due to abnormal vaginal bleeding, while five (2.08%) removed theirs due to abnormal vaginal discharge. The major reason for removal was the desire for pregnancy that accounted for 165 (70.26%), while one (0.51%) was removed due to dysmenorrhea.

Conclusion: The copper T380A was very effective, safe with fewer side effects, and easily available in this study. The request for removal is also low in our environment.

INTRODUCTION

One of the most sensitive and intimate decisions made by an individual or by a couple is that of fertility control.[1,2] Many couple use contraception to space their children or to limit the size of their family. Others desire to avoid childbearing because of the effects of pre-existing illness on the pregnancy, such as severe diabetes, or heart disease.[1-4] As a matter of public policy, some countries, especially those that are less developed, promote contraception in an effort to curb undesired population growth.[5,6]

Health care providers usually provide all persons requesting contraception with detailed information about the use of the method or methods, benefits, risks, and side effects so that an informed choice can be made relative to a particular method.[7]Different methods of contraception are therefore in use today, [2,7-13]and each has over time been undergoing developments toward achieving the above goals.

The IUCDs are among the most widely used contraceptive methods. The copper IUCDs are very effective and licensed to last 3–10 years. These devices, although effective, are not without side effects, which often prompt the users to request for removal.[14-16] It has undergone a lot of development, from the first generation of nonmedicated devices dominant in the 1960s. The first-generation devices include the Lippes loop and Saf-T coil made of plastic, the M-device and the Y-device made of stainless steel, the Dalkon shield made of polyvinyl acetate, the copper 7 (Gravigard) and copper-T 200. The second-generation medicated IUCDs of the 1970s and 1980s had primarily copper added to them. The second-generation IUDs include the Nova-T (Noncard) and multiload 250. The basic difference in the copper devices is in the shape and the amount of copper.[1-10] The third-generation IUDs commonly in use now include copper T380A, 380S, 380Ag, multiload 375, copper-safe 300 (Cu-safe 300), copper Fix 330 or Flexigard 330 and levonorgestrel releasing IUCD (Levonal).[6,13]

Recently, an intrauterine system containing levonorgestrel (released at 20 μg/day; Mirena) has been approved for use. It provides contraception for up to 5 years.

Copper T380A is by far the most popular IUCD in the world. A large variety of shapes and sizes have been tried with varying degrees of contraceptive effectiveness.[6,7,18-20] The paragard (copper T380A) is wound with copper wire that creates a surface area of copper 300 mm^2 on the vertical arms and 40 mm^2 on each of the transverse arms; the lifespan of this device is at least 10 years.

The exact mechanism of action is unknown. The most widely observed phenomenon is mobilization of leukocytes in response to the presence of the foreign body. The leukocytes aggregate around the IUD in the endometrial fluids and mucosa and, to a lesser extent, in the stroma and underlying myometrium. It is hypothesized that the leukocytes produce an environment hostile to the fertilized ovum.[20] Efficacy with the copper T380A device is high, with a failure rate of less than 1% per year with prolonged use.[19]

The side effects of bleeding, pelvic infection, and pain are common reasons for removal of the method of contraception. Medical reasons for removal are partial expulsion, usually occurring in the first few months of use, persistent cramping, bleeding or anemia, accounting for about 20% of removals during the first 3 months, acute salpingitis, or Actinomyces on Pap smear, pregnancy, intra-abdominal placement or perforation; and significant post-insertion pain, which may indicate improper placement or partial perforation.[14]

There are absolute contraindications to IUD use, these include current pregnancy, undiagnosed abnormal vaginal bleeding, acute pelvic inflammatory diseases, and suspected gynecologic malignancy.[15]

This study is aimed to determine the utilization rate of copper T IUCD, side effects, and request for removal at JANANA HOSPITAL,AJMER.

MATERIALS AND METHODS

This is a retrospective study. Approval was obtained from the Ethics committee and guidelines for retrospective studies followed. The data of users of copper T IUCD provided by the

Family Planning Clinic of this center from April 1, 2015 to March 31, 2020 were collated from the patient record folders. The records of users of other various forms of contraceptives during same period were also obtained. Other parameters of the IUCD users' reviewed were their age distributions and reasons for removal. All clients lost to follow-up were excluded from the study.

RESULTS

During this period, a total of 20,154 users were provided with various forms of contraceptives. Table 1 shows the yearly distribution of various forms of contraceptives over the study period. IUCD was the commonest form of contraception used at the JANANA Hospital, Ajmer Family Planning Unit over the five year period under review with a rate of 7,344(36.43%). There was a yearly higher request for IUCD over other forms of contraceptives over the period.

Table 1 summary of the various forms of contraceptives provided by the Family Planning Clinic during the 5-year period under review

METHOD	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL	PERCENTAGE
IUCD	454	443	437	2905	3105	7344	36.43%
INTERVAL STERILIZATION	56	40	83	142	161	482	2.39%
POSTPARTUM STERILIZATION	781	1050	1100	1200	1080	5211	25.85%
PILLS	506	358	535	822	894	3115	15.45%
INJ DMPA	122	138	137	228	197	822	4.07%
BARRIER	529	275	652	790	934	3180	15.77%
TOTAL	2448	2304	2944	6087	6371	20154	

Table 2 shows the age distribution of PPIUCD over the study period. Of a total of 7,344users of the contraception method over the period, highest users of PPIUCD accounting for 3,462 (47.14%) belonged to the age group of 20–24 years. There was a corresponding decrease in request for the method with age, accounting for 4 (0.054%) at age 45 year and above.

Table 2 The age distribution of various forms of contraceptives over the study period

Age	IUCD	PERCENTAGE
20-24 YEAR	3462	47.14%
25-29 YEAR	1860	25.32%%
30-34 YEAR	1117	15.20%
35-40 YEAR	721	9.81%
40-45 YEAR	180	2.45%
>45 YEAR	4	.054%
TOTAL	7344	

TABLE 3The indications for removal of IUCD by users during the period under review

Indications	Number	Percentage
To get pregnant	165	70.26
Removal and re- insertion	26	11.23
Abnormal vaginal bleeding	11	4.61
Husband's request	7	2.85
Method failure	1	0.51
Abnormal vaginal discharge	5	2.08
Lower abdominal pains	5	2.08
Waist pain	2	0.72
Internal heat	4	1.54
Missing tag	1	0.61
Amenorrhea	2	0.85
New spouse	3	1.13
Menopause	2	0.92
Dysmenorrhea	1	0.61
Total	235	100

Table 3 shows the indications for removal of IUD by users during the period under review.

IUCD seemed a highly preferred method of contraception as only eleven (4.61%) and five (2.08%) of the users requested for reversal due to abnormal vaginal bleeding and abnormal vaginal discharge, respectively. The major reason for removal was the desire for pregnancy that accounted for 165 (70.26%), while one (0.51%) was removed due to dysmenorrhea. The method was an effective mode of contraception as only one (0.51%) method failure was recorded.

CONCLUSION

The awareness and willingness to use modern contraceptive to control family size and prevent unwanted pregnancies are on the increase.

The copper T380A is very effective, safe, long-acting, easily available, and the most immensely used method of birth control in this study. Abnormal vaginal bleeding associated with copper T380A was a major side effect responsible for its removal. Effort should therefore be made to make available in all centers other forms of IUCDs with minimal side effect to improve utilization.

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