

ROLE OF MIRENA IN DUB PATIENTS

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Summary

To determine the effectiveness of Mirena in achieving a reduction in heavy menstrual blood loss in dysfunctional uterine bleeding. To evaluate improvement in Haemoglobin level (Hb gm%) in patients during treatment period. The study was conducted in the department of Obstetrics & Gynaecology, Chittagong Medical College Hospital, Chittagong, Bangladesh from August 2008 to July 2010. Thirty six patients with Dysfunctional Uterine Bleeding (DUB) in 30-45 years age group with Body Mass Index (BMI) of 18-30 during treatment period were included in this study. They were counseled, investigated and Levonogestrel Intrauterine device Mirena was inserted. Out come was measured by the Hb improvement and decrease in blood loss both in amount and duration. Record was kept and follow up was done. Ninety percent of the patients were relived from menorrhagia and one hundred percent improvement was seen in cases with polymenorrhagia. Fifty percent patients had an Hb of >11.1 gm% after 3 months of use. Mirena is a safe and effective device for treatment of DUB patients and it is an alternative to hysterectomy.

Key words

Mirena; Dysfunction Uterine Bleeding (DUB)

Introduction

In the absence of any obvious causes such as fibroid or adenomyosis the excessive uterine bleeding is said to dysfunctional uterine bleeding (DUB). An estimated one third of all out patient gynecological visits are for DUB [1]. Several forms of medical treatment for dysfunctional uterine bleeding exist each associated with varying success. The most commonly prescribed drug Norethisterone is effective only when given in large doses for prolong duration and perhaps most useful in the treatment of women with irregular menstrual cycle. Inhibitors of prostaglandin synthesis such as flurbiprofen and

mefenemic acid are also effective in particular when there is associated dysmenorrhoea. Antifibrinolytics agents such as tranexamic acid and the combined contraceptive pill will each reduce menstrual loss by about 50%. A daily low dose of danazol reduces this even further. In the long term however there is often poor compliance with such regimens and many women request more radical therapy. During the mid 1980's hysteroscopic method such as transcervical resection of endometrium (TCRE) would revolutionaries the treatment of dysfunctional uterine bleeding. Although success rate for TCRE are high in specialized centers. The procedures require substantial technical skill and complications are sometimes severe. A proportion of women would eventually require hysterectomy because of reoccurrence of bleeding problems [2]. An estimated 60% women referred with DUB undergo hysterectomy within five years [3].

The Levenogestrel contains intrauterine system Mirena is used to treat women with dysfunctional uterine bleeding (DUB). The reported oligomenorrhoea rate range from 75% to 91% and the amenorrhoea rate in randomized controlled trail was 36%[4]. It also decreases recourses to operative treatment like hysterectomy [5].

The objectives of the study were to determine the women diagnosed with DUB and treated with Mirena that decrease the amount and duration of bleeding. Also to evaluate correction of anemia in the form of improvement in Hb gm% during treatment.

Materials & methods

This study was conducted in the Department of Obstetrics & Gynaecology, Chittagong Medical College Hospital, Chittagong, Bangladesh from August 2008 to July 2010. It was prospective interventional study. Women diagnosed with DUB in the age group of 30-45 years with a BMI of 18-30 were included in this study. The exclusion criteria were menorrhagia due to other cause like recurrent PID, Postpartum endometritis, Fibroid, adenomyosis, endometrial and cervical abnormalities on histological and cytological examination, congenital abnormalities of uterus etc.

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Patients were counseled, investigated and informed consent taken. Mirena was inserted as per instructions. A record was kept follow up visits at 1, 3, 6 and 9 months and 1 yr and 2 yrs of insertion. Outcome was measured in terms of patients' satisfaction, improvement in Hb% and decreased blood loss which was specifies whether it was lighter, heavier or unchanged compared with their period before insertion of the device and duration of bleeding in days. The result were complied according to the above mentioned outcome measures.

Results

Table I shows the age distribution in patients selected for Mirena use. Maximum patients i.e. 44.45% were in the age range of 35-39 years. Table II shows change in Hb% with treatment. The maximum number of patients had an overall reduction of days of bleeding from an average 9 to 4.5-5 days. The bar diagram clearly shows the difference made by Mirena. Table III shows the improvements of symptoms. The problems faced by patients with Mirena insertion were as follows. Ten (25%) patients had backache which eased with simple analgesics. Eight patients had short term spotting and irregular bleeding. Two patients had some infection and one patient expelled Mirena spontaneously.

Table I: Age distribution (n = 36)

Age Range	Frequency
30~34 Years	8 (22.22%)
35~39 Years	16 (44.45%)
40~44 Years	12 (33.33%)

Mean Age was 37.55 years
Standard deviation was ± 4.03

Table II: Change in Hb% with Mirena use (n=36)

Hb gm%	No of patients at insertion of Mirena	No of patients 3 months after insertion of Mirena
<9 gm%	14 (38.88%)	0%
9~10 gm%	16 (44.46%)	6 (16.66%)
10.1~11 gm%	6 (16.66%)	12 (33.34%)
11.1 gm%	0%	18 (50%)

Before Mirena insertion
Mean hemoglobin level was 9.3 gm%
Standard deviation was ± 0.86
After Mirena insertion
Mean hemoglobin level was 11.1 gm%
Standard deviation was ± 1.92

Table III: Symptomatic Relief (N= 36)

Symptoms	No of patients complaining symptoms	No of patients relieved of symptoms
Menorrhagia	22	20 (90.9%)
Polymenorrhea	7	7 (100%)
Polymenorrhagia	5	2 (60%)
Metrorrhagia	2	2 (100%)

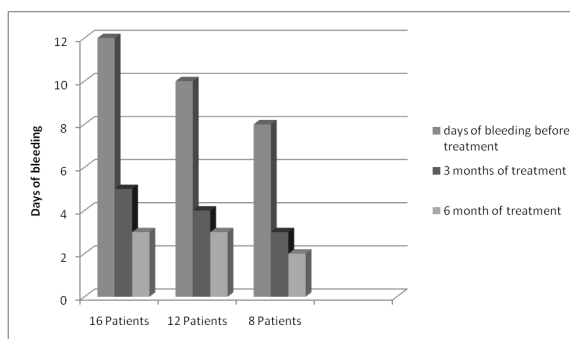


Fig 1: Reduction in days of bleeding after 3 months and 6 months of treatment

Discussion

Dysfunctional uterine bleeding has a massive impact on women's lives. One in 20 women aged 30~49 yrs consult their general practitioner each year with this complaint because it has become professional and social debilities. Once referred to gynaecologist, 65% of these women will have a hysterectomy with in 5 yrs and half of all women who have a hysterectomy for this reason have a normal uterus removed [4]. According to the Royal College of Obstetricians and Gynecologists (RCOG) guidelines drugs and the Mirena should be offered as first live treatment options and that surgical intervention such as endometrial ablation or hysterectomy should be offered as second line treatment [4].

Mirena (Levonorgestrel releasing intrauterine system) consists of T- shaped polyethylene frame with steroid reservoir (hormone elastomer core) around the vertical stem. The reservoir consists of a cylinder made of a mixture of Levonogestrel and silicon (Polydimethylsiloxane) containing of total of 52 mg of Levonogestrel. The reservoir is covered by a silicone (Polydimethylsiloxane) membrane. The T-body is 32mm in both the horizontal and vertical directions. The polyethylene of the T-body is compounded with barium sulfate which makes it radiopaque. A monofilament brown polyethylene

removal thread is attached to a loop at the end of the vertical stem of the T-shape device. Mirena contains 52 mg of Levonogestrel. Initially Levonogestrel is released at the rate of approximately 20 microgram/day. This rate decreases progressively to half that value after 5 years [6]. This acts as by preventing endometrial proliferation and consequently reduces both the duration and amount of menstrual blood loss. The food and drugs administration approved this method in December 2000.

Mirena is used for the treatment of dysfunctional uterine bleeding and women are more satisfied and willing to continue with Mirena compared to cyclic therapy. Mirena has shown to decrease the amount of bleeding over time by 79-94%. Twenty (55.55%) out of 36 patients who had been advised hysterectomy in our study decided against it. This is comparable to other studies in which 64-82% patients who were on the waiting list declined hysterectomy [6,7,8]. In a study published in 2009 the 5 year intervention symptom free percentage of patients with LNG-IUS was 70.6% (SD + 3.3%) [9]. Another study reports that in properly assessed and selected obese, premenopausal women with DUB at high risk for hysterectomy, the LNG-IUS was an effective treatment in 70% of patients [10,11]. In this study the overall reduction of days of bleeding was from an average of 9 days to 4.5~5 days which is comparable to other studies [12,13,14].

In case of dysfunctional uterine bleeding, the use of medical treatment should be considered as the first line treatment. Progestogens are often used in this condition and LNG-IUS is very effective [15,16]. After 3 months of insertion of Mirena a marked decrease was seen in anemia. An Hb of <9 gm% was seen in 38.88% patient before insertion and after three months of Mirena not a single patient had an Hb <9gm%. This study confirms the efficacy of Levonogestrel releasing intra-uterine system in control and reduction menstrual blood loss in patients with dysfunctional uterine bleeding. The LNG-IUS as an alternative treatment to hysterectomy in case of DUB patients thus leading to a reduction in morbidity and cost associated with surgery stay in hospital and also workload on the surgeons and hospital staff. Both the Levonogestrel releasing intrauterine system, Mirena and hysterectomy have proven effective for treatment of dysfunctional uterine bleeding but the long term cost of Mirena remained substantially lower than in the hysterectomy group. By providing improvement of health related quality of life at relatively low cost Mirena may offer a wider availability of choice for the patient with DUB and may decrease costs due interventions involving surgery [17].

Conclusion

We conclude that Mirena is a safe and effective device to be offered as treatment to patients with DUB, strongly recommended its use for greater benefits to a patient. The device has been a success story in this aspect saving many women from hysterectomy. Mirena is still not widely available and its high cost otherwise a large number of patient would have been added in this study.

Disclosure

All the authors declared no competing interest.

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