Original Article

Levonorgestrel Releasing Intrauterine System in the Treatment of Dysfunctional Uterine Bleeding

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Abstract

This study was designed to determine progress of women presenting with dysfunctional uterine bleeding (i.e decrease in amount and duration of bleeding in days) due to a cause amenable to treatment. To evaluate improvement in Haemoglobin level (Hb gm%) in patients during treatment.

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) 0f 18-30 during treatment period were included in the study. They were counselled, investigated and had Levonogestrel Intrauterine device inserted. Outcome was measured by 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 relieved from menorrhagia and one hundred percent improvement was seen in cases with polymenorrhagia. 50% patients had an Hb of >11.1gm% after 3 months of use.

Levonogestrel intrauterine system or LNG-IUS is a safe and effective device for the treatment of DUB patients and it is an alternative to hysterectomy.

Key Words: *Uterine bleeding, dysfunctional uterine bleeding*

Introduction

Abnormal menstrual bleeding is one of the most common complaints that we come across everyday and it is a serious health risk due to anaemia and general disability. "Dysfunctional uterine bleeding" is the term applied to the abnormal bleeding patterns that occur in women secondary to anovulation or oligo-ovulation and is often referred to as anovulatory bleeding and in the absence of organic cause. It may be menorrhagia, metrorrhagia, polymennorrhagia and polymenorrhea. An estimated one third of all outpatient gynecological visits are for abnormal uterine bleeding[1].

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The management options available are prostaglandin synthetase inhibitors, antifibrinolytics and progestins, combined estrogen and progestins, danazol, GnRH agonists and antagonists. Also, conservative surgical techniques like Endometrial resection, thermal balloon ablation, laser ablation are available. Of the 600,000 hysterectomies performed each year in the US, 20% are for DUB[1]. Among the management options available for anovulatory abnormal uterine bleeding cyclic progestins offer a therapeutic option. In ovulatory cycles cylic progestins from day 5-25 of the cycle were significantly less effective at reducing menstrual blood loss than progesterone releasing-IUS as continuous progestins lead to endometrial atrophy[1].

Levonogestrel intrauterine system or LNG-IUS is used for the treatment of abnormal bleeding and women prefer it over cyclic therapy. Mirena is shown to decrease the amount of bleeding by 79-94%[2]. It also decreases the operative treatments like hysterectomy[3]. 64-82% patients on waiting list decline hysterectomy[4]. The objectives of this study were to determine the women diagnosed with DUB treated with Mirena that decrease the amount and duration of bleeding. Also to evaluate correction of anaemia in the form of improvement in Hb gm% during treatment.

Materials and Methods

This study was conducted in the Department of Obstetrics & Gynaecology, Chittagong Medical College Hospital, Chittagong from August 2008 - July 2010. It was a prospective interventional study. Women diagnosed with DUB accepting contraceptives during treatment period in the age group of 30-45 years with a BMI of 18-30 were included in the study. The exclusion criteria was known or suspected pregnancy, current or recurrent PID, Postpartum endometritis, fibroid , adenomyosis, Cervical dysplasia, undiagnosed abnormal vaginal bleeding, congenital abnormality of uterus, acute liver disease and previous history of deep venous thrombosis. Patients were counseled, investigated and informed consent taken. LNG-IUS was inserted as per instructions. A record was kept of followup visits at 1, 3, 6 and 9 months and 1 year and 2 years after insertion. Outcome was measured in terms of patient satisfaction, improvement in Hb% and decreased blood loss (duration and bleeding) and the results were compiled according to the above mentioned outcome measures.

Results

Table I shows the age distribution in patients selected for LNG-IUS 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. Table III shows the improvement of symptoms. The early problems faced by patients with LNG-IUS 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 LNG-IUS which was reinserted. 55.55% patients who had been advised hysterectomy decided to take LNG-IUS and were satisfied with the device.

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 LNG-IUS	No of patients 3 months after insertion of LNG-IUS
<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 LNG-IUS insertion
Mean hemoglobin level was 9.3 gm%
Standard deviation was ± 0.86
After LNG-IUS insertion
Mean hemoglobin level was 11.1 gm%
Standard deviation was ± 1.92

Table III: Patients reporting symptom relief (n=36)

Group	Symptoms	No of patients reporting symptoms	No of patients relieved
Menorrhagia	Menorrhagia/ Dysmenorrhea	20	18 (90.00%)
Irregular Cycle	1.Polymenorrhea	9	9 (100%)
	2.Metrorrhagia	3	3 (100%)
	3.Menometrorrhagia	1	1 (100%)
	4.Polymenorrhea + Menorrhagia	3	2 (66.66%)

Discussion

LNG-IUS is used for the treatment of abnormal bleeding and women are more satisfied and willing to continue with LNG-IUS compared to cyclic therapy. LNG-IUS 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[5,6,7]. In a study published in 2009 the 5 year intervention free percentage of patients with LNG-IUS was 70.6% (SD + 3.3%)[8]. Another study reports that in improperly assessed and selected obese, premenopausal women with DUB at high risk for traditional therapies, the LNG-IUS was an effective treatment in 70% of patients[9,10]. In our 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[11,12,13].

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[14,15]. After 3 months of insertion of LNG-IUS a marked decreased was seen in anaemia. An Hb of < 9 gm% was seen in 38.88% patients before LNG-IUS insertion and after 3 months of LNG-IUS not a single patient had an Hb < 9gm%. Our study confirms the efficacy of levonorgestrel releasing intra-uterine system in the control and reduction of menstrual blood loss in patients with dysfunctional uterine bleeding. The LNG-IUS as an alternative treatment to hysterectomy in case of DUB patients and in this patients thus leading to a reduction in morbidity associated with surgery, cost of surgery, stay in hospital and also workload on the surgeons and hospital staff.

We conclude that LNG-IUS is a safe and effective device to be offered as treatment to patients with DUB. It is an alternative to hysterectomy and we strongly recommend its use. The limitation that we found was its high cost otherwise a larger number of patients could have been included.

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