

Levonorgestrel Intrauterine System (MIRENA): Initial Experience in the Management of Abnormal Uterine Bleeding

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ABSTRACT

Introduction: The Levonorgestrel intrauterine system (MIRENA) is a long acting contraceptive device act by releasing progesterone into the uterus It is also efficient in medical management of abnormal uterine bleeding. Levonorgestrel intrauterine system is best option for those ladies who want to avoid surgery in cases of abnormal uterine bleeding. **Aims:** To assess the effectiveness of MIRENA in abnormal uterine bleeding. **Methods:** This is a hospital based cross sectional study done at the department of obstetrics and gynecology in ladies with history of abnormal uterine bleeding. The study was done from January 2020 to January 2022 for a period of two years. Data were collected, recorded in standard Proforma and analyzed by using EESPPS version 17. **Results:** Majority of patients were multipara of age group 35-40 yrs. Mirena caused decrease in heavy menstrual blood loss by 2.4% in 4month of use and 47.6% by one year. After one year of use 83.3% patient had better compliance, 9.5% had expulsion, and only 7.1% had to undergo hysterectomy. **Conclusion:** Mirena is the best alternative in the medical management of abnormal uterine bleeding with good patient compliance reducing the rate of hysterectomy.

Keywords: Abnormal uterine bleeding, Hysterectomy, MIRENA

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INTRODUCTION

Abnormal uterine bleeding (AUB) is defined as any deviation from normal menstrual pattern either in the form of duration or amount of blood flow. It is common gynecological disorder of reproductive age group requiring medical and surgical treatment.¹ Levonorgestrel intrauterine device (LNG-IUD) is a nonsurgical alternative in treatment of AUB, also an effective long acting contraceptive method. It reduces menorrhagia, raise hemoglobin level.^{4,8,10} It is T-shaped polyethylene frame, T body with a steroid reservoir made of a mixture of levonorgestrel and silicone, containing total of 52 mg of levonorgestrel around the vertical stem. The device releases the hormone at an initial rate of 20 mcg/day and decrease the rate of 14mcg/day after five years. It reduces blood loss by 86% in first three month of use and 35% women become amenorrhagic by 24 month of use. LNG_IUD is effective medical treatment alternative to hysterectomy.^{5, 6,9} Hence the study was conducted to evaluate the effectiveness of LNG-IUD in reducing bleeding and the rate of hysterectomy done for abnormal uterine bleeding.

METHODS

This was a hospital based cross sectional study done at Department of Obstetrics and Gynecology Nepalgunj Medical College from January 2020 to January 2022 for period of two years. 42 women aged between 30 to 60 with history

of abnormal uterine bleeding with uterine size less than 12 weeks without distorted uterine cavity were studied. Detailed history was taken and physical examination (general, systemic and breast) was done. All 42 women had transvaginal ultrasonography and pathology was diagnosed. Papanicolaou test and endometrial biopsy report negative for malignancy were enrolled in the study. Approval from ethical committee was taken. MIRENA insertion was done in outpatient department, patient was asked to empty her bladder, kept in dorsal lithotomy position per speculum was done anterior lip of cervix was hold with allies forceps then uterine sound was inserted into uterine cavity , position of uterus and length of endometrial cavity was measured. MIRENA was loaded plunger was adjusted according to the length measured by uterine sound. The device was inserted with no touch technique, patient was asked to follow up in one month, and then yearly for at least next two years. The effectiveness of device was assessed by reduction in amount of bleeding in case of abnormal uterine bleeding.

Statistical Analysis

Data were collected, recorded in standard proforma and analyze by using version 17 of SPSS.

RESULTS

Age group (year)	Frequency	Percentage (%)
30-40	21	50
40-50	20	47.6
>50	01	2.4
Total	42	100

Table I: Distribution of patients according to the age group

Parity	Frequency	Percentage (%)
Primi	9	21.4
Multi	33	78.6

Table II: Distribution of patients according to the parity

Maximum patients were multipara i.e. 78.9%. (Table II)

Age group	Uterine pathology				Total
	Adenomyosis	Dysfunctional uterine bleeding	Endometriosis	Fibroid	
30-40	1 (2.38%)	10 (23.80%)	1 (2.38%)	9 (21.42%)	21 (50%)
40-50	3 (7.14%)	13 (30.95%)	3 (7.14%)	1 (2.38%)	20 (47.61%)
>50	1 (2.38%)	0	0	0	1 (2.38%)
Total	5 (11.9%)	23 (54.8%)	4 (9.5%)	10 (23.8%)	42 (100%)

Table III: Distribution of patients with relation to uterine pathology and age group

Out of 42 patients 23(54.8%) had dysfunctional uterine bleeding followed by fibroid uterus in 10(23.8%) patients, 5(11.9%) patients had adenomyosis and 4(9.5%) patients had endometriosis. (Table III)

Outcome	Frequency	Percentage
Insitu	35	83.3
Expulsion	4	9.5
Surgery	3	7.1
Total	42	100

Table IV: Distribution according to the compliance of use of Mirena

Bleeding pattern	1 month of use	4 month of use	1 year of use
Regular	12 (28.6%)	16 (38.1%)	11 (26.2%)
Spotting	12 (28.6%)	25 (59.5%)	11 (26.2%)
Heavy menstrual bleeding	18 (42.9%)	None	None
Amenorrhoea	None	1 (2.4%)	20 (47.6%)
Total	42	42 (100%)	42 (100%)

Table V: Distribution of patient according to bleeding pattern after use of device

The above table shows role of Mirena controlling heavy menstrual bleeding. About 47.6% become amenorrhic by one year of use of LNG-IUD.

DISCUSSION

Mirena is long acting hormone containing reversible contraceptive device very much effective in controlling excessive menstruation. In our study Mirena caused 2.4% decrease in bleeding in 4 months, 47.6% decrease in one year. Mirena caused 80% decrease in median blood loss at 4 month, 95% decrease by one year in study done by Dhamangaonkar PC¹ and Milsom I.⁶ According to Tariq N⁴ only 12.3% decrease in blood loss (menorrhagia) by one year. In our study maximum number of participants (50%) was of age group 30-40 yrs which is similar to the study done by Desai RM² and Vilos GA.⁷ The maximum participants with history of abnormal uterine bleeding were multiparous i.e. 78.6% and 21.4% were primiparous.

In our study maximum participants were case of dysfunctional uterine bleeding i.e. 54.8% followed by fibroid uterus (23.8%), adenomyosis (11.9%) and endometrioma (9.5%) but in study done by Dhamangaonkar PC¹ 44.3% had dysfunctional uterine bleeding, 18.6% had fibroid uterus, 37.1% had adenomyosis and 4.3% had endometrioma. In one year follow up 83.3% patients were with Mirena insitu, responding well with device this shows good patient compliance. The expulsion rate was 9.5% and 7.1% were non responder so underwent surgery. Which is similar to study done by Desai RM² and, here 82.5% with Mirena insitu, 10% had expulsion and 12.5% undergone surgery. According to Kriplain A³ expulsion rate was 9.5 and 77.7% patients were responding well with Mirena which is similar to our study.

LIMITATIONS

Limitations of this study are small sample size and long duration of study and lack of proper follow up, if the entire patient had timely follow up then we could have find out pros and cons of Mirena and its comparison with other medical and surgical methods of management of abnormal uterine bleeding. Mirena could have been best alternative to hysterectomy.

CONCLUSION

Levonorgestrol intrauterine device (LNG-IUD). It is good alternative to those ladies with history of abnormal uterine bleeding who wants to avoid surgery as well want its contraception benefits. Thus the study concludes Mirena is reversible hormone containing contraceptive device, 90% efficient in avoiding hysterectomy. Mirena termed to be medical hysterectomy device having good patient compliance controlling menorrhagia by (47.6%) in one year.

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