LEVONORGESTREL INTRAUTERINE SYSTEM (LNG-IUS, MIRENA) IN DYSFUNCTIONAL UTERINE BLEEDING (DUB)

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ABSTRACT

Objectives: 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.

Material and Methods: The study was conducted in the Department of Gynecology & Obstetrics, Khyber Teaching Hospital, Peshawar, from August 2005 to August 2007. Thirty-two patients with Dysfunctional Uterine Bleeding (DUB) in 30-45 years age group with Body Mass Index (BMI) of 18-30 willing to accept contraception during treatment period were included in the study. They were counseled, investigated and had Levonogestrel Intrauterine device Mirena inserted. Outcome was measured in terms of patient satisfaction, Hb improvement and decrease in blood loss. Record was kept and follow up done.

Result: Fifty-nine percent of the patients who had been advised hysterectomy backed out and were satisfied with Mirena. Eighty-eight percent patients were relieved of menorrhagia and 100% improvement was seen in cases with polymenorrhagia. Fifty percent of patients had an Hb of >11 gm% after 3 months of use.

Conclusion: We conclude that Mirena is a safe and effective device to be offered as treatment to patients with DUB and it is an alternative to hysterectomy.

Key Words: Uterine, bleeding, dysfunctional.

INTRODUCTION

The abnormal uterine bleeding we come across everyday is a serious health risk due to anemia and general disability. It constitutes a nuisance and impinges on a woman’s social, sexual, psychological and occupational functioning due to unpredictable and heavy bleeding. It may be menorrhagia, metrorrhagia, polymenorrhagia and polymenorrhoea. In the absence of an organic cause it is known as dysfunctional uterine bleeding (DUB) which may be ovulatory or anovulatory. An estimated one third of all outpatient gynecological visits are for abnormal uterine bleeding.

The management options available are prostaglandin synthetase inhibitors, antifibrinolytics and progestins, combined estrogen and progestins, androgens, GnRH agonists and antagonists. Also, conservative surgical techniques like Endometrial resection, thermal balloon ablation, laser ablation and hysterectomy are available. Of the 600,000 hysterectomies performed each year in the US, 20% are for DUB. Among the management options available for anovulatory abnormal uterine bleeding cyclic pro-gestins offer a therapeutic option. In ovulatory cycles cyclic progestins from day 5-26 of the cycle were significantly less effective at reducing menstrual blood loss than progesterone releasing-IUS as continuous progestins lead to endometrial atrophy.

Levonogestrel intrauterine system or LNG-IUS Mirena 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%. It also decreases recourse to operative treatments like hysterectomy. 64-82% patients on waiting list decline hysterectomy. The objectives of this study were to determine progress of women diagnosed with abnormal uterine bleeding due to a cause amenable to treatment, with Mirena. Also to evaluate correction of anemia in the form of improvement in Hb gm% during treatment.

MATERIAL AND METHODS

This study was conducted in the Department of Gynecology & Obstetrics, Khyber Teaching Hospital, Peshawar from August 2005 – August 2007. 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, 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. Mirena 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 (amount and number of days, presence / absence of clots) and the results were compiled according to the above mentioned outcome measures.

**RESULTS**

Table 1 shows the age distribution in patients selected for Mirena use. Maximum patients i.e 43.75% were in the age range of 35-39 years. Table 2 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 Figure 1 clearly shows the difference made by Mirena. Table 3 shows the improvement of symptoms. The early problems faced by patients with Mirena insertion were as follows. Eight (25%) patients had backache which eased with simple analgesics. 21.8% patients had short term spotting and irregular bleeding. Four percent had some infection and 1 patient expelled Mirena which was reinserted. 59.37%

Table 1: Age distribution (n = 32)

<table>
<thead>
<tr>
<th>Age range</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-34 years</td>
<td>7 (21.8%)</td>
</tr>
<tr>
<td>35-39 years</td>
<td>14 (43.75%)</td>
</tr>
<tr>
<td>40-44 years</td>
<td>11 (34.37%)</td>
</tr>
</tbody>
</table>

Mean age was 38 years
Standard deviation was ±7.62

Table 2: Change in Hb% with Mirena use (n=32)

<table>
<thead>
<tr>
<th>Hb gm %</th>
<th>No. of patients at Insertion of Mirena</th>
<th>No. of patients 3 months after insertion of Mirena</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 9 gm %</td>
<td>13 (40.62%)</td>
<td>0%</td>
</tr>
<tr>
<td>9.1–10.1 gm%</td>
<td>14 (43.75%)</td>
<td>5 (15.62%)</td>
</tr>
<tr>
<td>10 – 11 gm%</td>
<td>5 (15.62%)</td>
<td>11 (34.37%)</td>
</tr>
<tr>
<td>&gt; 11 gm%</td>
<td>0%</td>
<td>16 (50%)</td>
</tr>
</tbody>
</table>

Before Mirena insertion
Mean hemoglobin level was 9 gm%
Standard deviation was ±2.16

After Mirena insertion
Mean hemoglobin level was 11 gm%
Standard deviation was ±3.86

Table 3: Patients reporting symptom relief (n=32)

<table>
<thead>
<tr>
<th>Group</th>
<th>Symptoms</th>
<th>No. of patients reporting symptoms</th>
<th>No. of patients relieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menorrhagia</td>
<td>Menorrhagia/ Dysmenorrhea</td>
<td>18</td>
<td>16 (88.88%)</td>
</tr>
<tr>
<td>Irregular Cycle</td>
<td>1. Polymenorrhagia</td>
<td>8</td>
<td>8 (100%)</td>
</tr>
<tr>
<td></td>
<td>2. Metrorrhagia</td>
<td>2</td>
<td>2 (100%)</td>
</tr>
<tr>
<td></td>
<td>3. Menometrorrhagia</td>
<td>1</td>
<td>1 (100%)</td>
</tr>
<tr>
<td></td>
<td>4. Polymenorrhagia + Menorrhagia</td>
<td>3</td>
<td>2 (66.66%)</td>
</tr>
</tbody>
</table>

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

patients who had been advised hysterectomy decided against it and were satisfied with Mirena.

**DISCUSSION**

Mirena is used for the treatment of abnormal 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%. Nineteen (59.37%) out of 32 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 hysterectomy6,7. In a study published in 2009 the 5 year intervention free percentage of patients with LNG-IUS was 70.6% (SD ± 3.3%). 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 patients8,10. 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 studies11,12,13.
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. After 3 months of insertion of Mirena a marked decreased was seen in anemia. An Hb of < 9gm% was seen in 40.62% patients before Mirena insertion and after 3 months of Mirena 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 high rate of surgery cancellation is a proof of the potential role of the LNG-IUS as an alternative treatment to hysterectomy in these 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.

CONCLUSION

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

REFERENCES