

UNDER PEER REVIEW IN IJAR

2 Levonorgestrel 3 Intrauterine System 4 (MIRENA): Initial 5 Experience in the 6 Management of 7 Abnormal Uterine 8 Bleeding

9 ABSTRACT

10 Background: Abnormal uterine bleeding
11 (AUB) is a common gynecological
12 condition requiring medical or surgical
13 management. The levonorgestrel
14 intrauterine system (LNG-IUS, Mirena) is
15 a long-acting, reversible, hormone-
16 releasing device that offers an effective
17 non-surgical option for women with AUB.

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19 Aim: To assess the effectiveness of Mirena
20 in reducing abnormal uterine bleeding
21 and avoiding hysterectomy.

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23 Methods: A cross-sectional hospital-based
24 study was conducted at SMS Medical
25 College, Jaipur, from December 2021 to
26 December 2023. A total of 42 women
27 aged 30–60 years with AUB were
28 enrolled. Patients underwent evaluation,
29 and Mirena was inserted using the no-
30 touch technique. Follow-up was done at 1
31 month, 4 months, and 1 year to assess
32 bleeding patterns, compliance, and device
33 outcomes.

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35 Results: The majority of patients (50%)
36 were in the 30–40 age group, and 78.6%
37 were multiparous. The most common
38 pathology was dysfunctional uterine

39 bleeding (54.8%), followed by fibroid
40 (23.8%), adenomyosis (11.9%), and
41 endometriosis (9.5%). At 1 year, 83.3%
42 had Mirena in situ, 9.5% had expulsion,
43 and 7.1% required surgery. By 1 year,
44 47.6% achieved amenorrhoea, with a
45 marked reduction in heavy bleeding.

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47 Conclusion: Mirena is a safe, effective, and
48 reversible treatment for AUB,
49 significantly reducing menstrual blood
50 loss and preventing hysterectomy in most
51 patients.

52 Keywords: Abnormal uterine bleeding,
53 Mirena, LNG-IUS, Levonorgestrel
54 intrauterine system, Contraception

55 INTRODUCTION

56 Abnormal uterine bleeding (AUB) is a
57 frequent gynecological complaint in
58 women of reproductive and
59 perimenopausal age groups. It can
60 significantly impair quality of life and
61 often leads to hysterectomy as a definitive
62 treatment. The levonorgestrel
63 intrauterine system (LNG-IUS, Mirena)
64 provides an effective, minimally invasive,
65 reversible alternative. Mirena reduces
66 menstrual blood loss by up to 86% within
67 3 months and induces amenorrhoea in up
68 to 35% of women within 2 years. Given its
69 dual role as a contraceptive and
70 therapeutic device for AUB, Mirena offers
71 a conservative option for women wishing
72 to avoid hysterectomy.

73 METHODOLOGY

74 This hospital-based cross-sectional study
75 was conducted at the Department of
76 Obstetrics and Gynecology, SMS Medical
77 College, Jaipur, from December 2021 to

December 2023. Forty-two women aged 30–60 years presenting with AUB, with uterine size <12 weeks and no distortion of the uterine cavity, were included. Patients with malignancy, contraindications to IUD insertion, or unwillingness for follow up were excluded. Detailed history, physical and systemic examination, ultrasonography, Pap smear, and endometrial biopsy were performed before inclusion. Mirena was inserted under aseptic conditions with no-touch technique. Follow-up was done at 1 month, 4 months, and 1 year to assess bleeding pattern and compliance.

RESULTS

Figure 1: Age distribution of patients

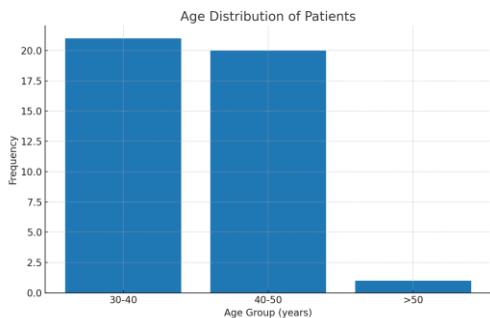


Figure 2: Parity distribution of patients

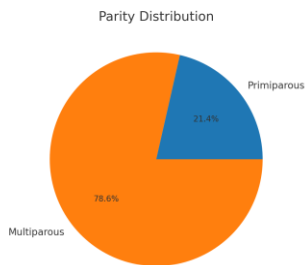


Figure 3: Distribution of uterine pathology

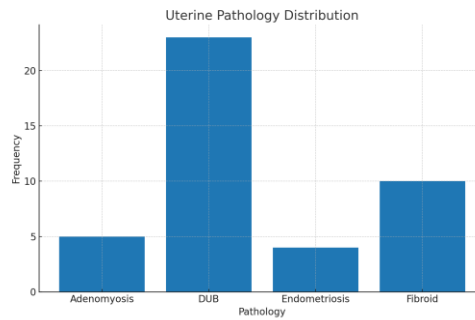


Figure 4: Compliance with Mirena use

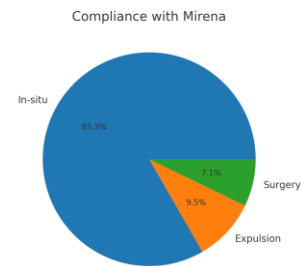
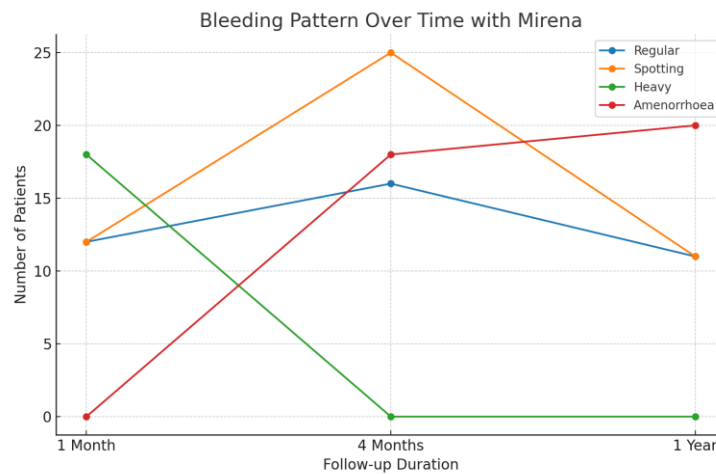


Figure 5: Bleeding pattern trends after Mirena use



DISCUSSION

Mirena demonstrated significant efficacy in controlling AUB in our study, with 83.3% patients continuing the device at 1 year. Nearly half of the patients achieved

111 amenorrhoea by 1 year, and heavy
112 bleeding was eliminated in all. Our
113 findings align with studies by
114 Dhamangaonkar et al., who reported an
115 80–95% reduction in menstrual blood
116 loss within 1 year, and Milsom et al., who
117 also demonstrated sustained reduction in
118 menorrhagia. The expulsion rate in our
119 study (9.5%) is comparable to
120 international reports (8–12%).
121 Dysfunctional uterine bleeding was the
122 most common pathology in our cohort,
123 similar to Desai et al. and Kriplani et al.
124 Mirena thus proves to be an effective,
125 conservative alternative to hysterectomy,
126 especially in women wishing to preserve
127 fertility or avoid surgery.

128 LIMITATIONS

129 The study was limited by its small sample
130 size and reliance on patient follow-up. A
131 larger, multi-center trial with longer
132 follow-up would provide stronger
133 evidence for widespread adoption of
134 Mirena as first-line therapy for AUB.

135 CONCLUSION

136 The levonorgestrel intrauterine system
137 (Mirena) is a safe, effective, and reversible
138 treatment option for abnormal uterine
139 bleeding. It provides a substantial
140 reduction in bleeding, induces
141 amenorrhoea in a significant proportion
142 of patients, and reduces the need for
143 hysterectomy. Given its efficacy,
144 reversibility, and high patient compliance,
145 Mirena may be considered a medical
146 alternative to surgical management of
147 AUB.

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