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A Study On Control Of Abnormal Uterine Bleeding By The Use Of Medroxy Progesterone Acetate (MPA) In Reproductive Women At A Tertiary Care Hospital.

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ABSTRACT

Menorrhagia or heavy menstrual bleeding (HMB) is an excessive blood loss that impairs a women's quality of life, physical, emotional, social. It is experienced by one third of women of reproductive age. FIGO in 2011 has classified AUB as structural and non-structural causes. To study the clinical response and effectiveness of Medroxy progesterone to control HMB. Assessment of patient compliance. To assess the side effects and ADR. To counsel the patient regarding AUB and prescription adherence. All women who reported to outpatient department of obstetrics and gynecology with complaints of heavy menstrual bleeding could be evaluated. By physical examination and gynecological subjected to baseline investigations like complete blood count with indices, ultrasound pelvis to rule out structural causes and thyroid profile. Those women who meet inclusion criteria will be enrolled for the study after taking an inform consent. Women who meet criteria were given medroxy progesterone acetate (MPA) 20mg 2times day. Women asked to follow up and advised to visit OPD after resumption of subsequent menstrual period to collect data. Mean time of cessation of bleeding documented and taper the dose after 1 week. The mean bleeding time before treatment was found to be 11.560±2.00. The mean bleeding time was found to be reduced after treatment with MPA. The mean bleeding time at 3rd month after treatment was found to be 5.521±1.743. he mean haemoglobin count before treatment was found to be 8.425±0.64 and it increased after treatment with MPA i.e at 3rd month after treatment was found to be 10.169±0.8052. The mean Endometrial thickness before treatment was found to be 8.59±0.92 but decreased at 3rd month after treatment and was found to be 7.60±5.89. The mean pictorial blood loss assessment chart(PBAC) before treatment was found to be 279.01±42.454. The mean pictorial blood loss assessment chart PBAC at 3rd month after treatment was found to be 127.96±38.137. The decrease in the bleeding time, PBAC before and after treatment with MPA was found to be statistically significant. The increase in the Haemoglobin count before and after treatment with MPA was found to be statistically significant. AUB is an ever-increasing gynaecological disease, having impacts on patients' physical and mental health in addition to economic implications. The approach to management should ensure general well-being and improved quality of life. Our study concludes that MPA is safe and efficacious in this regard with reduced PBAC score, endometrial thickness, bleeding duration (days). MPA controlled AUB without any major side effects.

Keywords: Abnormal Uterine Bleeding, Heavy Menstrual Bleeding, Pictorial Blood Loss Assessment, Medroxy Progesterone Acetate Endometrial Thickness

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INTRODUCTION

Women often visit a gynecologist for abnormal uterine bleeding associated with ovulatory dysfunction (AUB-O). The woman's age, the intensity of her bleeding, her medical risk factors, her need for contraception, and her goal for future fertility are just a few of the variables that influence the AUB-O treatment plan [1]. HMB, IMB, and a combination of heavy and extended menstrual bleeding (MB) are only a few of the symptoms referred to as AUB [2]. Menorrhagia is a condition that "complains of heavy cyclical menstrual bleeding occurring over several consecutive cycles," according to one definition. Total menstrual blood loss (MBL) is defined as 80 ml or more each period [3].

At some point throughout their reproductive years, 10 to 35 percent of women report having heavy periods, and 5 percent seek medical attention to have HMB investigated [4].

The Federation International Gynaecology and Obstetrics developed the PALM-COEIN categorization system to identify the specific underlying causes of AUB. The etiology of AUB may be categorized using the abbreviation "PALM-COEIN": Coagulopathy, ovulatory dysfunction, polyp, adenomyosis, leiomyoma, malignancy, hyperplasia, endometrial, iatrogenic, and Unclassified as of yet [5].

Ovulation is often accompanied by predictable cyclic menstruation every 22–35 days, but bleeding associated with AUB-O is typically erratic in timing and flow and frequently punctuated by amenorrheic episodes. Measurement of serum progesterone, timed to the best estimate of mid-luteal phase, or alternatively, a similarly timed endometrial biopsy, may offer evidence confirming or disproving the occurrence of ovulation in a particular cycle if there is doubt regarding ovulatory status. A woman would be labelled as AUB-O if it were determined that she had an ovulation issue [6].

When selecting a course of treatment for abnormal uterine bleeding, a number of considerations should be taken into account. These factors include the source and severity of the bleeding, preferences toward fertility and contraception, medical comorbidities, side effects, cost, and relative effectiveness. Treatment options for non-emergent uterine hemorrhage are more varied, both medically and surgically. For most patients, medicinal care is the first line of treatment in order to minimize surgical risks and maintain fertility. When quality-adjusted life years are taken into account, the 20-mcg daily formulation of the levonorgestrel-releasing intrauterine device (Mirena) is equally effective as hysterectomy in reducing excessive monthly bleeding (71% to 95% reduction in blood loss). Oral contraceptives that include estrogen and progestin are useful (35% to 69% reduction) and can also be used to control bleeding in ovulatory dysfunction patients.39,48 Oral progestin's taken continuously are another hormone treatment that works well (87% decrease), but patient satisfaction over the long term is poor. There are two non-hormonal, well-tolerated, and effective options: oral tranexamic acid (Lysteda; 26%) and nonsteroidal anti-inflammatory drugs (10% to 52% reduction).

Treatment for anovulatory irregular uterine bleeding entails initiating ovulatory cycles or administering extra progesterone to counteract estrogen's proliferative impact on the endometrium, since exposure to unopposed estrogen raises the risk of endometrial cancer [6].

Treatment with cyclic progestin or combination oral contraceptives is advised by ACOG. Oral contraceptives and estrogen therapy cause regular withdrawal bleeding, lower the risk of cancer or hyperplasia, and treat any associated excessive menstrual bleeding. Preferably, oral contraceptives with 35 mcg or less of ethinyl estradiol. Oral medroxyprogesterone acetate at a cyclic dosage of 10 mg daily for 10 to 14 days each month is also efficacious this medication is known as Provera [9].

Progestins successfully reduce heavy bleeding during menstruation. For menorrhagia, progestin therapy must be used for 21 days per month, in contrast to the shorter period of oral progestin therapy used for anovulatory uterine hemorrhage. In order to treat ovulatory dysfunction, synthetic progestins are primarily utilized to imitate the effects of natural progesterone produced by the ovary. Medroxyprogesterone acetate (MPA) is a viable 17α-hydroxyprogesterone derivative that exhibits a high degree of selectivity similar to progesterone. Its bioavailability and half-life are longer than those of progesterone, it can be safely given to women requiring hormone therapy without affecting their body's natural production of progesterone. 5–10 mg per day, or 80 mg per cycle, is the transformation dose of MPA that converts the proliferative endometrium into the secretory endometrium. Despite the fact that this medication has been shown to have androgenic and anabolic effects, it is thought to lack enough

estrogenic activity. Because of these pharmacodynamics qualities, MPA can be used to treat AUB-O medically [8]. If the endometrium is normal or has thickened, high-dose progestin alone (medroxyprogesterone acetate 10–20 mg twice daily; megestrol acetate 20–40 mg twice daily; norethindrone 5 mg twice daily) can also effectively treat acute severe anovulatory hemorrhage. After seven to ten days, treatment should be reduced to once daily. The course of treatment should last for roughly three weeks. A thicker, more vascular, and more delicate endometrium undergoes stabilizing predecidual alterations when high-dose progestin therapy is administered. But after progestin discontinuation, a significant quantity of tissue still needs to be removed, leading to a so-called "medical curettage."[9].

Need For The Study

- AUB-O describes a patient with anovulatory, oligo- or irregular ovulation, or experiencing luteal out-of-phase (LOOP) events, particularly in reproductive women.
- Just as progesterone is the dominant and controlling influence in normal menstrual cycles, Progestins are the mainstay of treatment for anovulatory bleeding.
- This study in particular emphasizes to control the heavy menstrual bleeding in reproductive age women with ovulatory dysfunction which causes medical curettage using Medroxyprogesterone.
- And also to know the effectiveness of Medroxyprogesterone in the treatment of heavy menstrual bleeding which can avoid surgical intervention in those women
- To enhance the knowledge of patient regarding the disease and treatment by patient counselling in the form of patient information leaflet.

Aims And Objectives:

- To assess the effectiveness of Medroxy progesterone acetate in the management of Abnormal uterine bleeding (AUB) in reproductive women at a tertiary care hospital.
- To determine the clinical response and effectiveness of medroxyprogesterone to control AUB.
- To enhance the knowledge of the patients regarding their condition and treatment through patient counselling.
- To determine the side effects of the drug.

METHODOLOGY

This was a prospective observational study conducted for 6 months from January 2023 to June 2023 at MVJMC&RH, Bengaluru on 125 reproductive women with AUB. On the basis of statistics obtained from obstetrics and gynecology, M.V.J Medical College & Research Hospital, an average of 30 cases per month fitting the criteria of the study with study duration of 6 months, we can expect to have N=180. Based on this population size, using YAMANE equation, for a known population size, sample size (n) equal to

$$n = N/1+Ne2$$

n=sample size
N=population size
e= margin of error (for 95% of confidence level, margin error =0.05)

$$n=180/1+180*0.05*0.05 = 180/1.45 = 125$$

Inclusion Criteria

- Women between 18 to 45 years.
- HMB lasting longer than 8 days

Exclusion Criteria

- Pregnancy.

- Women with structural causes polyps, adenomyosis, fibroids.
- Malignancy and Coagulopathy.
- Systemic diseases like thyroid disease, diabetes, hyperprolactinemia.
- History of genital trauma, migraine, DVT and liver pathology.

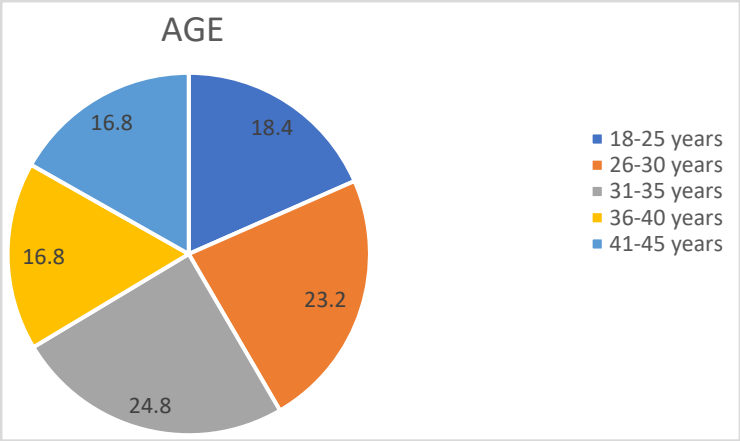
Human ethical clearance was obtained from the Institutional Ethics Committee **REF: MVJ MC&RH/IEC-77/2023.**

A validated questionnaire was used to collect the data regarding the BD, ET, HB, patient medical and medication history, co morbidities etc., It includes the PBAC and VAS scale to analyse the bleeding and pain. Written informed consent was taken from the study participants before collecting the data. A pre-tested, semi-structured questionnaire was used to collect information on socio-demographic variables and clinical history related to AUB by interview method. HB, PBAC, ET and bleeding duration were recorded before the start of therapy. Women who meet criteria were given Medroxyprogesterone acetate 20mg 2times a day. For Inpatients, mean cessation the bleeding was documented and discharged after the prescriber tapers the dose to 10mg thrice a day for one week. Women discharged were asked to follow up and advised to visit the OPD after resumption of subsequent menstrual period for data collection. For Outpatients, MPA 20mg is given to patient two times during their period and advised to take the medication till bleeding stops and they were advised to report to OPD to taper the dose to 10 mg thrice a day for one week. Then patients were asked to visit OPD in next cycle and at 3rd month after the treatment to monitor the ET, HB, PBAC and BD. Collected data was analysed statistically to evaluate the clinical response.

RESULTS

Table 1: Distribution of the study participants according to their age group

Age	Frequency N	Percentage %
18-25 years	23	18.4
26-30 years	29	23.2
31-35 years	31	24.8
36-40 years	21	16.8
41-45 years	21	16.8
Mean ± SD	32.34±7.557	



Majority of the study participants belonged to the age group 31-35 years (24.8%) of age. The mean age of the study participants was found to be 32.34±7.557.

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Table 2: Distribution of the study participants according to their Height

Height	Frequency N	Percentage %
140-145 cm	11	8.8
146-150 cm	22	17.6
151-155 cm	43	34.4
155-160 cm	34	27.2
>160 cm	15	12.0
Mean ± SD	152.95±5.69	

Majority (34.4%) of the study participants were in the height range of 151-155 cm. The mean height of the study participants was found to be 152.95±5.69 cm.

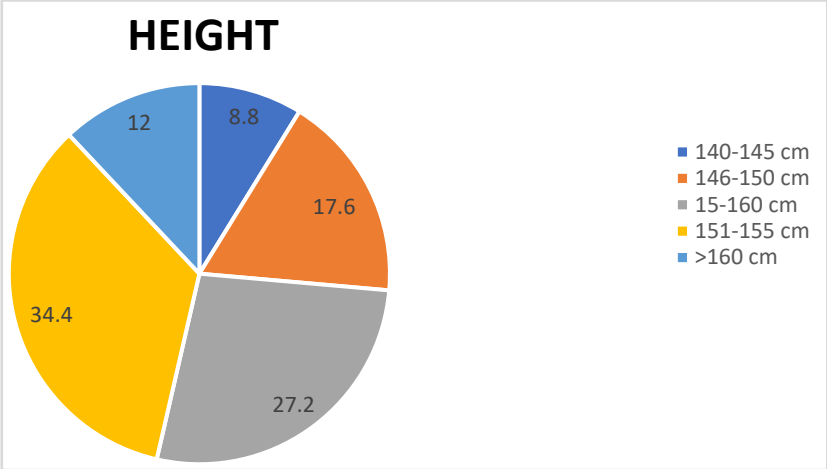

Table 3: Distribution of the study participants according to their Weight:

Weight	Frequency N	Percentage %
41-50 kgs	7	5.6
51-60 kgs	43	34.4
61-70 kgs	51	40.8
71-80 kgs	19	15.2
81-90 kgs	5	4.0
Mean ± SD	62.77±8.19	

Majority (40.8%) of the study participants were in the weight range of 61-70 kgs. The mean weight of the study participants was found to be 62.77±8.19 kgs.

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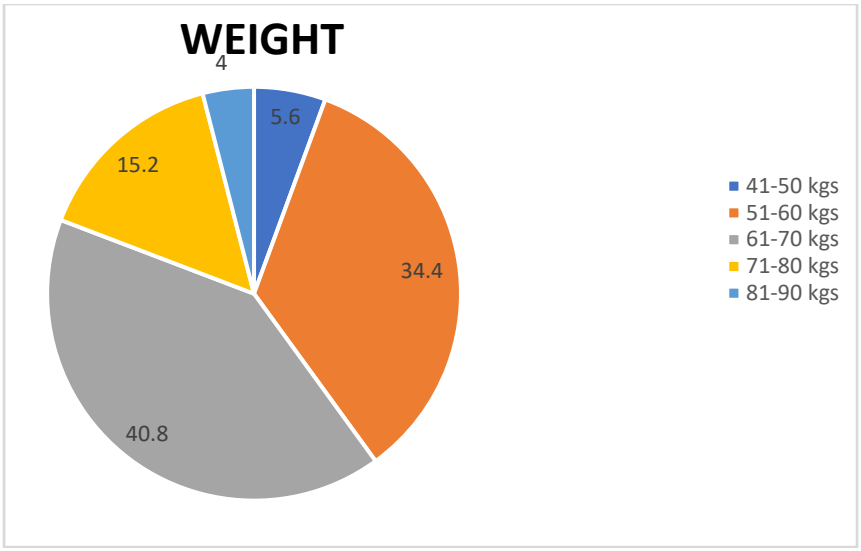

Table 4: Distribution of the study participants according to their BMI

BMI	Frequency N	Percentage %
18.5-24.9 kg/m^2	31	24.8
25-29.9 kg/m^2	79	63.2
30-39.9 kg/m^2	15	12.0
Mean ± SD	26.76±2.56	

Majority (63.2%) of the study participants were in the BMI range of 25-29.9 kg/m^2. The mean BMI of the study participants was found to be 26.76±2.56 kg/m^2.

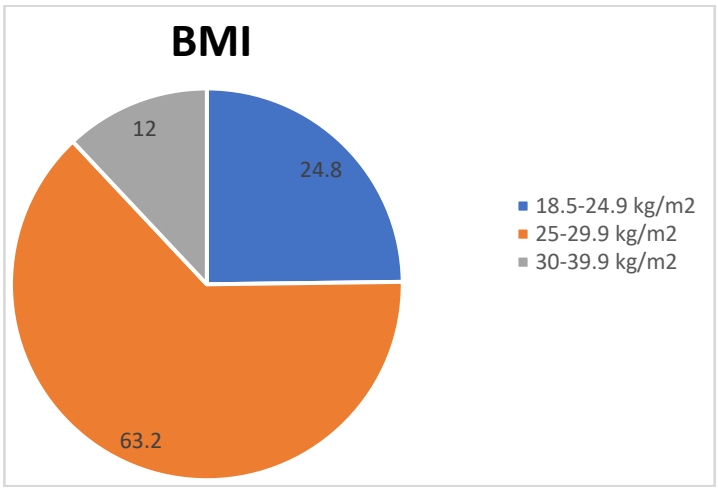

Table 5: Distribution of the study participants according to their Marital status

Marital status	Frequency N	Percentage %
Unmarried	22	17.6
Married	103	82.4

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82.4% of the study participants were married.

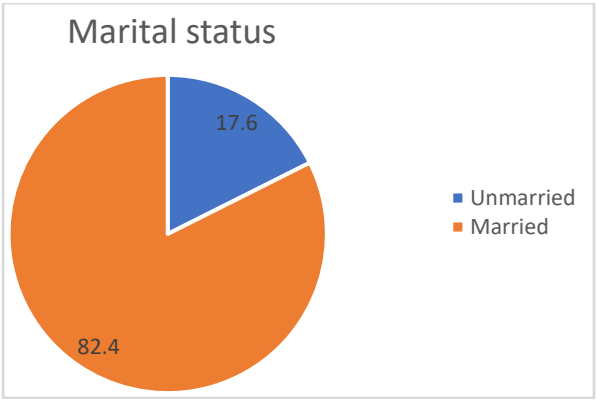

Table 6: Distribution of the study participants according to their Parity:

Parity	Frequency N	Percentage %
Nullipara	33	26.4
Multipara	92	73.6
P1	34	27.2
P2	47	37.6
P3	7	5.6

73.6% of the study participants were multipara.

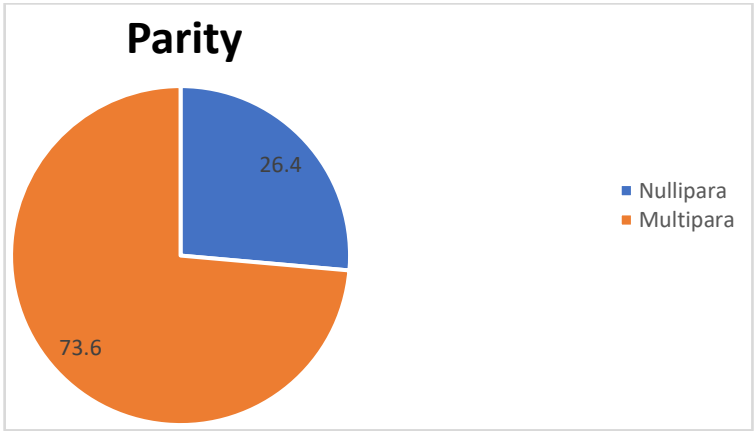

Table 7: Distribution of the study participants according to their Presentation of AUB

Presentation of AUB	Frequency N	Percentage %
Menorrhagia	60	48%
Metrorrhagia	32	25.6%

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Polymenorrhagia	23	18.4%
Polymenorrhea	10	8.0%

48% of the study participants had Menorrhagia, 25.6% of the study participants had Metrorrhagia, 18.4% of the study participants had Polymenorrhagia and 8% of the study participants had Polymenorrhea.

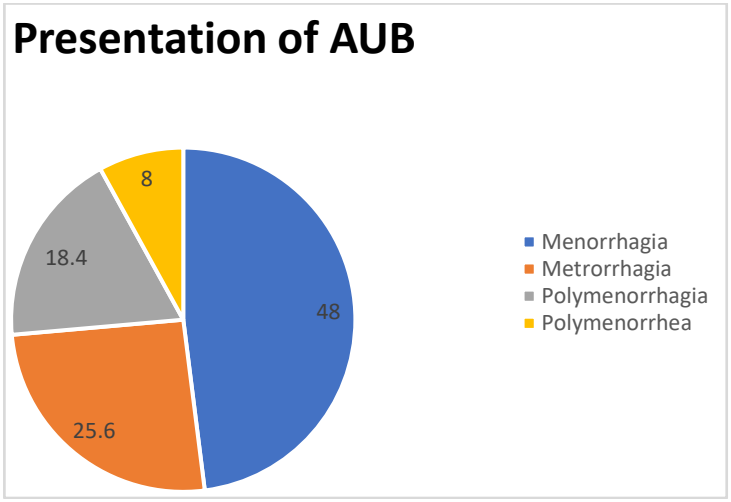

Table 8: Bleeding time over the study period

Bleeding time	Mean	Std. Deviation
Before treatment	11.560	2.0026
1st month	9.602	1.9693
3rd month	5.521	1.7435

The mean bleeding time before treatment was found to be 11.560±2.00. The mean bleeding time was found to be reduced after treatment with MPA. The mean bleeding time at 3rd month after treatment was found to be 5.521±1.743.

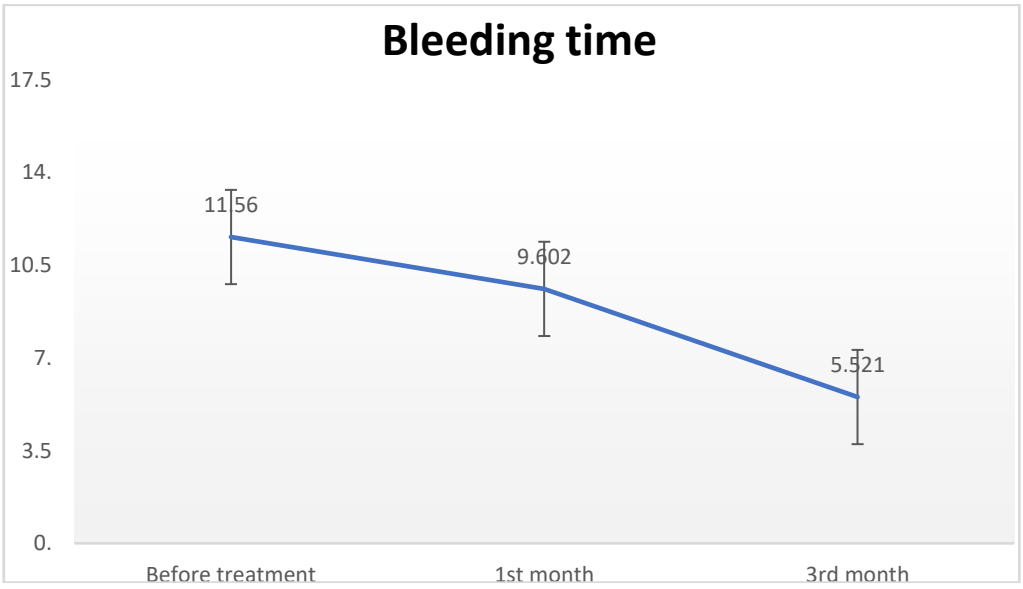

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Table 9: Distribution of the study participants according to their Bleeding time over the study period

Bleeding time	Before treatment		After treatment (3rd month)	
	Frequency N	Percentage %	Frequency N	Percentage %
3to5	-	-	50	40
5-7	-	-	54	43.2
7-9	5	4	14	11.2
9-11	41	32.8	7	5.6
11-13	42	33.6	-	-
>13	37	29.6	-	-

All the study participants had bleeding time more than 7 before treatment. Majority (43.2%) of the study participants had bleeding time between 5-7 at 3rd month following treatment with MPA. 40% of the study participants had bleeding time between 3-5 days at 3rd month following treatment with MPA.

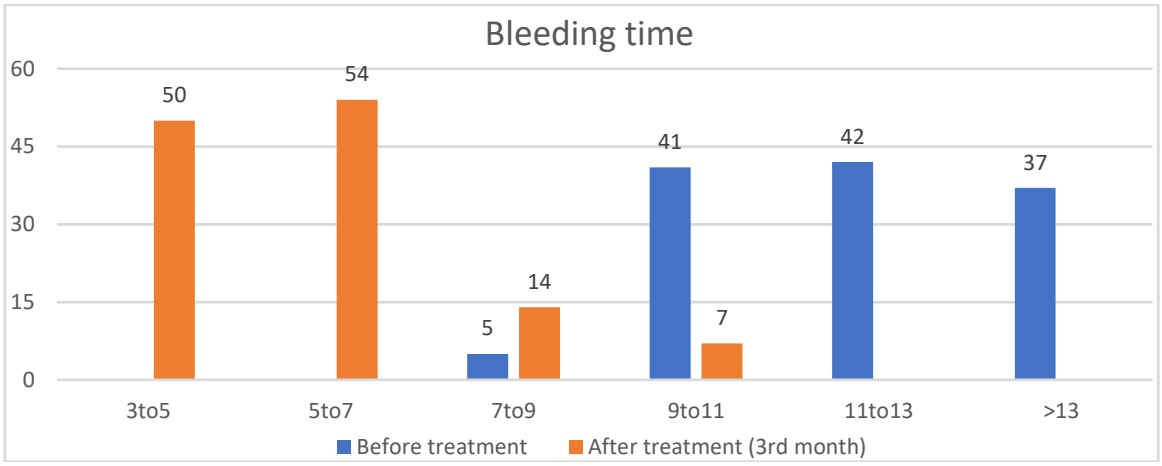

Table 10: Haemoglobin count over the study period

Haemoglobin	Mean	Std. Deviation
Before treatment	8.425	0.6405
1st month	8.822	0.6811
3rd month	10.169	0.8052

The mean haemoglobin count before treatment was found to be 8.425±0.64. The mean haemoglobin count was found to be increased after treatment with MPA. The mean haemoglobin count at 3rd month after treatment was found to be 10.169±0.8052.

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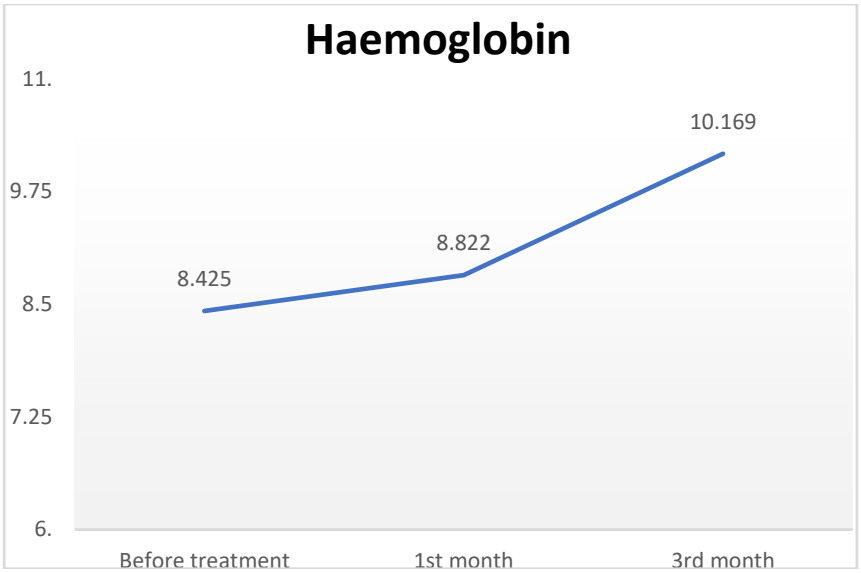

Table 11: Distribution of the study participants according to their Haemoglobin count over the study period

Haemoglobin	Before treatment		After treatment (3rd month)	
	Frequency N	Percentage %	Frequency N	Percentage %
<9	110	88	9	7.2
9-9.5	9	7.2	11	8.8
9.6-10	6	4.8	20	16
10-10.5	-	-	49	39.2
10.6-11	-	-	24	19.2
>11	-	-	12	9.6

88% of the study participants had haemoglobin count less than 9 before treatment. Majority (39.2%) of the study participants had haemoglobin count between 10-10.5 at 3rd month following treatment with MPA. 19.2% of the study participants had haemoglobin count between 10.6-11 at 3rd month following treatment with MPA.

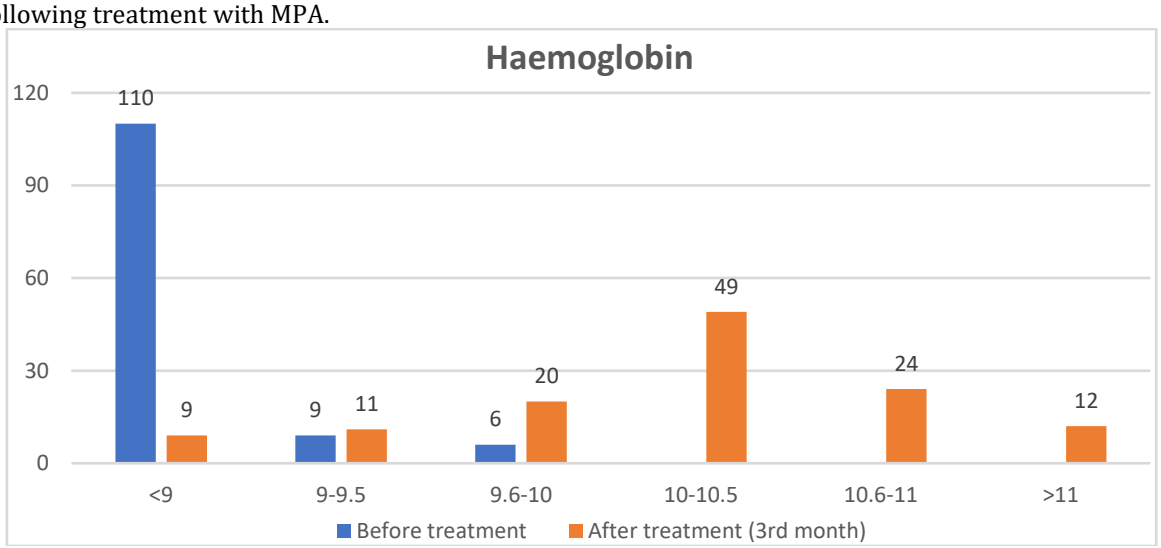

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Table 12: Endometrial thickness over the study period

Endometrial thickness	Mean	Std. Deviation
Before treatment	8.590	0.9215
3rd month	7.08	0.8988

The mean Endometrial thickness before treatment was found to be 8.59±0.92. The mean Endometrial thickness was found to be decreased after treatment with MPA. The mean Endometrial thickness at 3rd month after treatment was found to be 7.08±0.89.

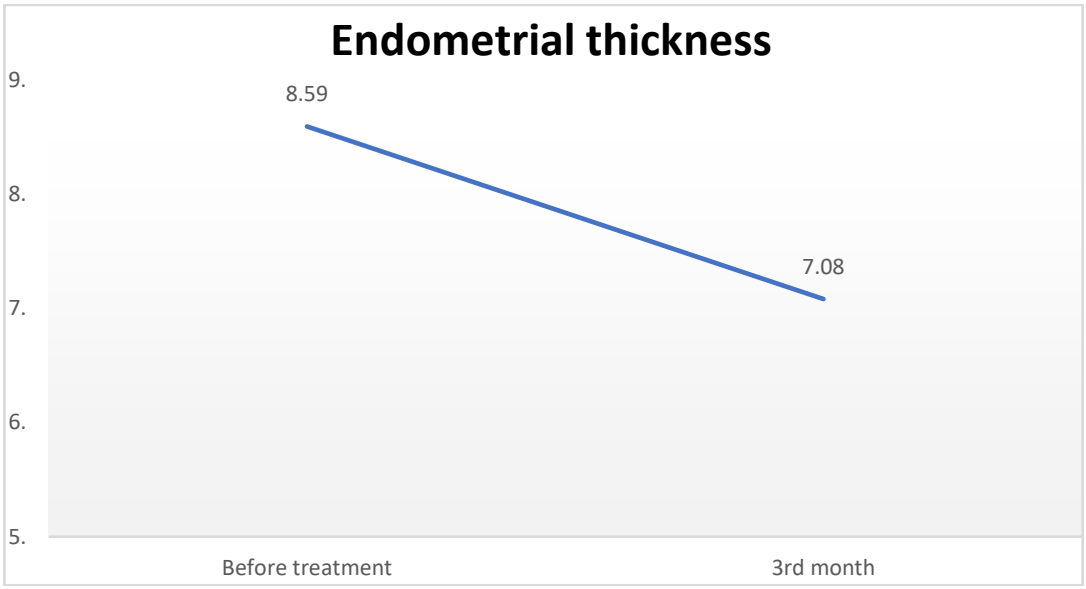

Table 13: Distribution of the study participants according to their Endometrial thickness over the study period

Endometrial thickness	Before treatment		After treatment (3rd month)	
	Frequency N	Percentage %	Frequency N	Percentage %
5to6	-	-	21	16.8
6to7	5	4.0	42	33.6
7to8	29	23.2	32	25.6
8to9	45	36.0	28	22.4
>9	46	36.8	2	1.6

36.8% of the study participants had endometrial thickness more than 9 before treatment. Majority (33.6%) of the study participants had endometrial thickness between 6to7 at 3rd month following treatment with MPA. 25.6% of the study participants had endometrial thickness between 7to8 at 3rd month following treatment with MPA.

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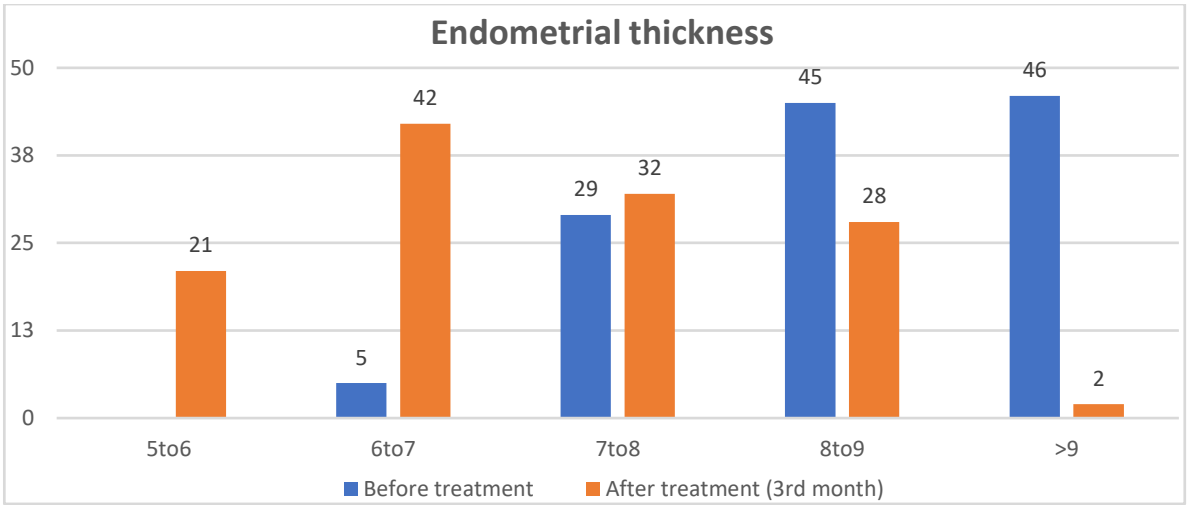

Table 14: Pictorial blood loss assessment chart over the study period

Pictorial blood loss assessment chart	Mean	Std. Deviation
Before treatment	279.01	42.454
1st month	218.34	50.925
3rd month	127.96	38.137

The mean PBAC before treatment was found to be 279.01±42.454. The mean PBAC was found to be decreased after treatment with MPA. The mean PBAC at 3rd month after treatment was found to be 127.96±38.137.

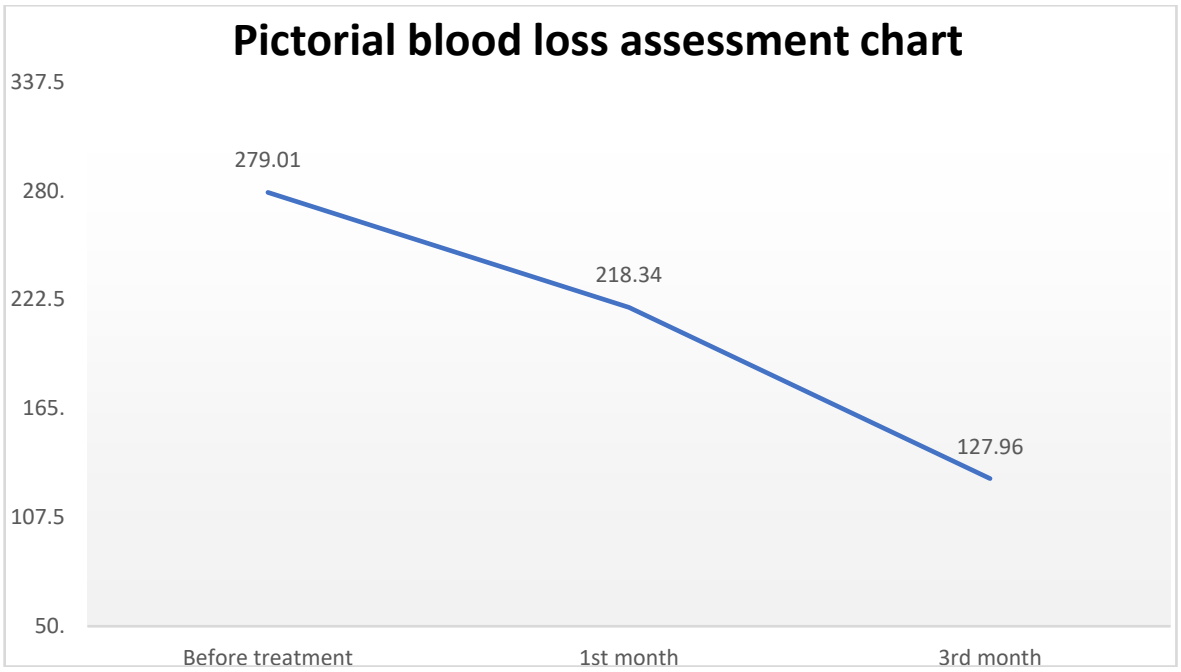

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Table 15: Distribution of the study participants according to their Pictorial blood loss assessment chart over the study period

Pictorial blood loss assessment chart	Before treatment		After treatment (3rd month)	
	Frequency N	Percentage %	Frequency N	Percentage %
<90	-	-	25	20.0
90-120	-	-	39	31.2
120-150	1	0.8	35	28.0
150-180	3	2.4	11	8.8
180-210	-	-	9	7.2
>210	121	96.8	6	4.8

96.8% of the study participants had PBAC more than 210 before treatment. Majority (31.2%) of the study participants had PBAC between 90-120 at 3rd month following treatment with MPA. 25.6% of the study participants had PBAC between 120-150 at 3rd month following treatment.

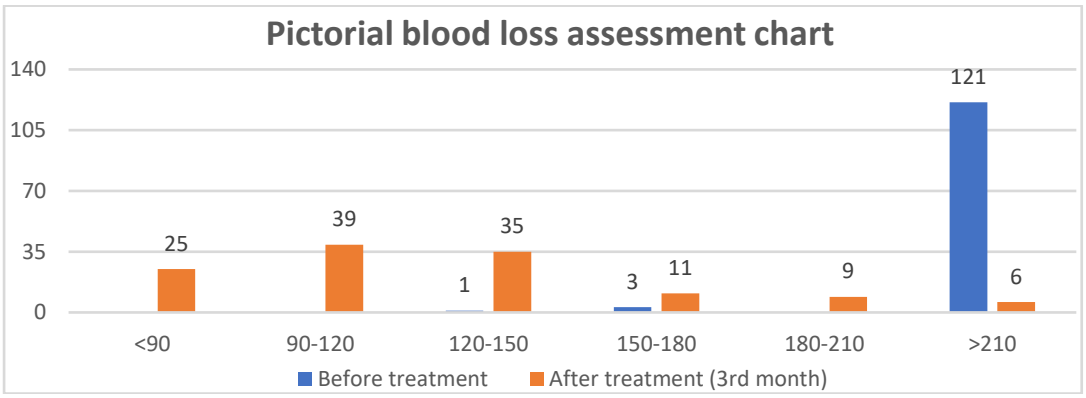

Table 16: Association of laboratory parameters between before treatment values with 3rd month values

Before treatment-3rd month				
Laboratory Parameters	Paired difference	95% CI		P VALUE
		Upper	Lower	
Bleeding time	6.0392±1.6596	5.7454	6.3330	**<0.001***
Haemoglobin	-1.7440±0.6980	-1.8676	-1.6204	**<0.001***
Endometrial thickness	0.9872±5.8518	-0.0488	2.0232	0.062
PBAC	151.048±36.529	144.581	157.515	**<0.001***

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The decrease in the bleeding time, PBAC before and after treatment with MPA was found to be statistically significant. The decrease in the Endometrial thickness before and after treatment with MPA was not found to be statistically significant. The increase in the Haemoglobin count before and after treatment with MPA was found to be statistically significant.

Table 17: Distribution of the study participants according to their Tranexamic acid requirement:

Tranexamic acid	Frequency N	Percentage %
Yes	10	8
No	115	92

The bleeding was not controlled in 8% of the study participants, and hence tranexamic acid was from 2nd month.

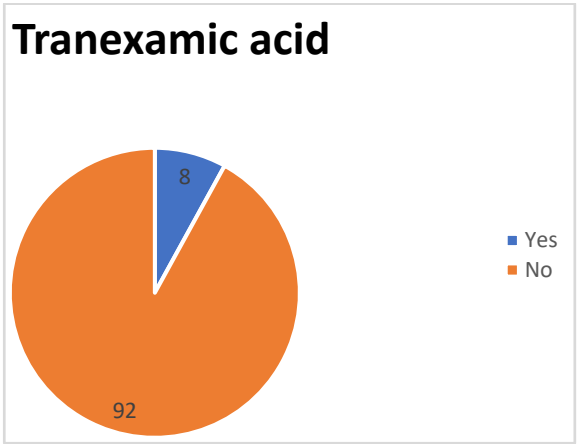

Table 18: Distribution of the study participants according to adverse effects following treatment with MPA:

Adverse effects	Frequency N	Percentage %
Bloating	12	9.6
Fatigue	9	6.3
Increased appetite	5	4.0
Mood swings	-	-
Cramping	3	2.4
Nausea	4	3.2
Bone pain	1	0.8

9.6% of the study participants had bloating, 6.3% had fatigue, 4% had increased appetite and 3.2% had nausea as adverse effect following MPA administration.

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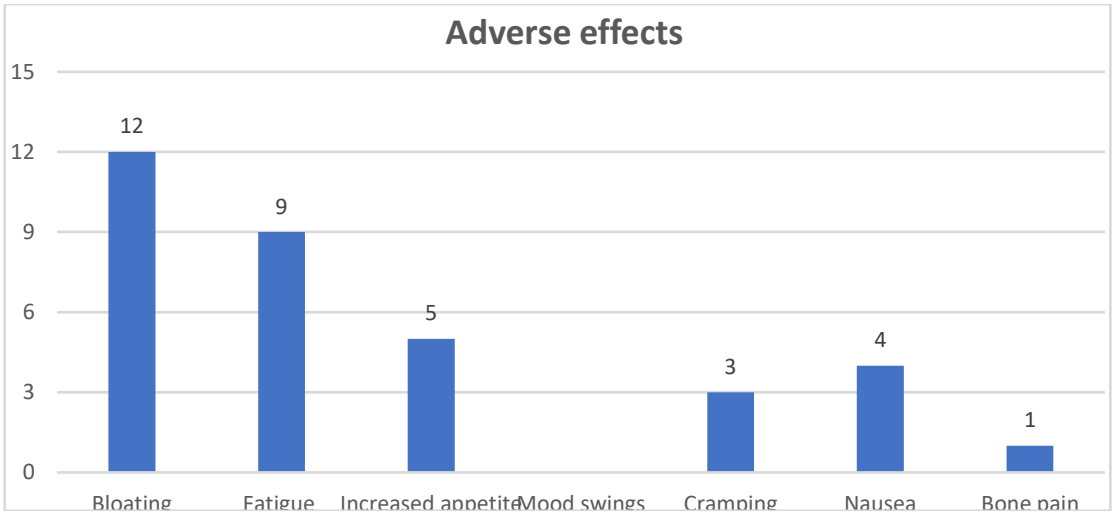
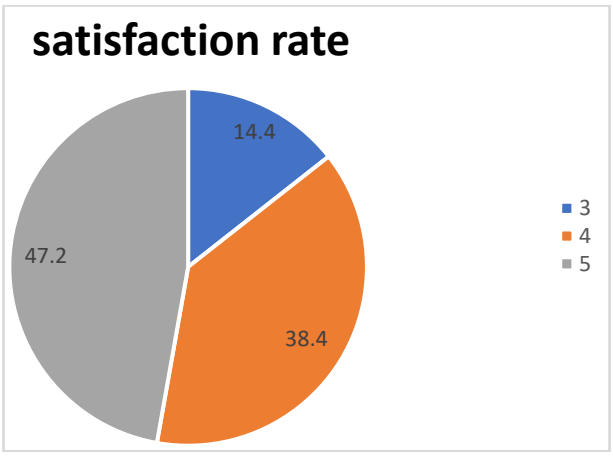


Table 19: Distribution of the study participants according to their satisfaction rate

Satisfaction rate	Frequency N	Percentage %
1	-	-
2	-	-
3	18	14.4
4	48	38.4
5	59	47.2

47.2% of the study participants had the satisfaction rate of 5 followed by 38.4% with the satisfaction rate of 4.



DISCUSSION

Hormone-based therapies have an important place as medical therapy in the treatment of AUB-O [6]. Hormone-based treatment consists of synthetic progestins, combined oral contraceptives, GnRH analogs, and intrauterine device insertion with levonorgestrel [7]. Synthetic progestins are predominantly used to mimic the effects of endogenous progesterone produced by the ovary to treat ovulatory dysfunction. Of these progestins, medroxyprogesterone acetate (MPA), a viable 17α-hydroxyprogesterone

derivative having a highly similar selectivity to progesterone, has a higher bioavailability and a longer half-life than progesterone and can be safely administered to women requiring hormone therapy without any change in endogenous progestin production [10,11]. The transformation dose of MPA that transforms the proliferative endometrium into the secretory endometrium is 5–10 mg daily, and 80 mg per cycle. This drug is considered to lack sufficient estrogenic activity, although androgenic and anabolic effects have been demonstrated [12]. Although studies have compared the efficacy of MPA with different progestins, there are no data comparing MPA treatments used for different durations [13,14].

In the present study, Majority of the study participants belonged to the age group 31-35 years (24.8%) of age. The mean age of the study participants was found to be 32.34±7.557. In a study done by Bender RA et al [8], the mean age of the study participants was found to be 44.27±7.42. In a study done by Godha Z et al [17], the mean age of the study participants was found to be 35.5 ±6.9 years. In a study done by Ammerman SR et al [15], the mean age of the study participants was found to be 40.7±9.35. In a study done by Mir SA et al [16], the mean age of the study participants was found to be 39.90±5.418.

In the present study, Majority (63.2%) of the study participants were in the BMI range of 25-29.9 kg/m^2. The mean BMI of the study participants was found to be 26.76±2.56 kg/m^2. In a study done by Ammerman SR et al [15], the mean BMI of the study participants was found to be 34.9±8.0956 kg/m^2. In a study done by Mir SA et al [16], the mean BMI of the study participants was found to be 23.63±4.574 kg/m^2.

In the present study, 82.4% of the study participants were married. In a study done by Mir SA et al [16], 96.84% of the study participants were married. In the present study, 73.6% of the study participants were multipara. In a study done by Mir SA et al [16], 86.35% of the study participants were found to be multipara**.** In a study done by Bender RA et al [8], the mean parity was found to be 2.27±1.20. In a study done by Godha Z et al [17], the mean parity was found to be 3.4±1.2.

In the present study, 48% of the study participants had Menorrhagia, 25.6% of the study participants had Metrorrhagia, 18.4% of the study participants had Polymenorrhagia and 8% of the study participants had Polymenorrhea. In a study done by Bender RA et al [8], 68.2% was found to have prolonged menstrual bleeding. In a study done by Godha Z et al [17], 96% had heavy and very heavy menstrual bleeding. In a study done by Mir SA et al [16], 21.66% had Menorrhagia and 14.56% had Metrorrhagia.

In the present study, the mean bleeding time before treatment was found to be 11.560±2.00. The mean bleeding time was found to be reduced after treatment with MPA. The mean bleeding time at 3rd month after treatment was found to be 5.521±1.743. In a study done by Godha Z et al [17], the mean bleeding time before treatment was found to be 8.7 days. In a study done by Mir SA et al [16], the mean bleeding time before treatment was found to be 15.91±5.04 and the mean bleeding time post-treatment was found to be 9.7±1.91. In the present study, the mean haemoglobin count before treatment was found to be 8.425±0.64. The mean haemoglobin count was found to be increased after treatment with MPA. The mean haemoglobin count at 3rd month after treatment was found to be 10.169±0.8052. In a study done by Bender RA et al [8], the mean haemoglobin count before treatment was found to be 11.63±1.77 and the mean haemoglobin count post-treatment was found to be 11.90±1.54. In a study done by Godha Z et al [17], the mean haemoglobin count before treatment was found to be 8.7±0.72 and the mean haemoglobin count post-treatment was found to be 9.9 ±1.6. In a study done by Mir SA et al [16], the mean haemoglobin count before treatment was found to be 8.60±0.97 and the mean haemoglobin count post-treatment was found to be 9.55±0.90.

In the present study, the mean Endometrial thickness before treatment was found to be 8.59±0.92. The mean Endometrial thickness was found to be decreased after treatment with MPA. The mean Endometrial thickness at 3rd month after treatment was found to be 7.08±0.89. 36.8% of the study participants had endometrial thickness more than 9 before treatment. Majority (33.6%) of the study participants had endometrial thickness between 6 to 7 at 3rd month following treatment with MPA. 25.6% of the study participants had endometrial thickness between 7to8 at 3rd month following treatment with MPA. In a study done by Bender RA et al [8], 72.7% had endometrial thickness more than 14mm before treatment with MPA. In a study done by Godha Z et al [34], the mean Endometrial thickness before treatment was found to be 7.4±1.6 and the mean Endometrial thickness post-treatment 6.9±1.6. In a study done by Mir SA et al [16], the mean Endometrial thickness before treatment was found to be 8.4±2.09 and the mean Endometrial thickness post-treatment was found to be 7.46±1.91.

In the present study, the mean PBLAC before treatment was found to be 279.01±42.454. The mean PBLAC was found to be decreased after treatment with MPA. The mean PBLAC at 3rd month after treatment was found to be 127.96±38.137. In a study done by Godha Z et al [17], the median PBLAC before treatment was found to be 300 (100–650) and the median PBLAC post-treatment was found to be 75 (0–480). In a study done by Mir SA et al [16], the mean PBLAC before treatment was found to be 287.38±40.94 and the mean. PBLAC post-treatment was found to be 123.5±29.57.

In the present study, the decrease in the bleeding time, PBLAC before and after treatment with MPA was found to be statistically significant. The decrease in the Endometrial thickness before and after treatment with MPA was not found to be statistically significant. The increase in the Haemoglobin count before and after treatment with MPA was found to be statistically significant. In a study done by Godha Z et al [17], decrease in the bleeding time, PBLAC before and after treatment with MPA was found to be statistically significant. Also, the increase in the Haemoglobin count before and after treatment with MPA was found to be statistically significant. In a study done by Mir SA et al [16], decrease in the bleeding time, PBLAC before and after treatment with MPA and the increase in the Haemoglobin count before and after treatment with MPA was found to be statistically significant. In a study done by Shravage et al [18], the reduction in the mean PBAC score was 54.76 % with MPA after 4 months of treatment.

In the present study, the bleeding was not controlled in 8% of the study participants, and hence tranexamic acid was from 2nd month.

In the present study, the 9.6% of the study participants had bloating, 6.3% had fatigue, 4% had increased appetite and 3.2% had nausea as adverse effect following MPA administration. In a study done by Godha Z et al [17], 32 (16 %) patients complained of weight gain, 40 (20 %) patients complained of intermenstrual spotting, and 16 (8 %) patients developed dyspepsia. In a study done by Ammerman SR et al [15], Bloating was seen in 15% and Fatigue was seen in 13% of the study participants. In a study done by Mir SA et al [16], Some of the side effects with use of MPA were fever (2.5%), abdominal cramps (3.76%) and headache (3%), which also did not require medical attention. In the present study, the 47.2% of the study participants had the satisfaction rate of 5 followed by 38.4% with the satisfaction rate of 4.

Limitations

- It is not a comparative trial
- This study was conducted in small sample size in the hospital which increases probability error
- The period available to these month was limited, that is approximately months
- It is single cantered, not multi-center
- Not randomized A large randomized controlled trial is needed to further validate the results by comparing its efficacy and efficiency with other hormonal preparation.

CONCLUSION

- AUB is an ever-increasing gynaecological disease, having impacts on patients' physical and mental health in addition to economic implications. The approach to management should ensure general well-being and improved quality of life. Our study concludes that MPA is safe and efficacious in this regard with reduced PBLAC score, endometrial thickness, bleeding duration (days), and increased Hb concentration (g/dL).
- MPA was found to be very effective in stopping acute and controlling long-term bleeding and was associated with less side effects.
- It has been shown to halt bleeding rapidly.
- This regimen has good compliance, few side effects, and high patient satisfaction.

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