



**COMPARISON OF ORAL MEDROXY PROGESTERONE ACETATE (MPA) AND LEVONORGESTROL INTRA UTERINE SYSTEM (LNG-IUS) FOR MANAGEMENT OF DYSFUNCTIONAL UTERINE BLEEDING IN PERIMENOPAUSAL AGE GROUP AT TERTIARY CARE CENTRE**

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**Abstract**

- **Introduction:** Abnormal uterine bleeding is one of the most common reasons for women to seek for care. **Dysfunctional uterine bleeding (DUB) describes the spectrum of abnormal bleeding patterns in the absence of a medical illness or pelvic pathology.** It mainly presents as menorrhagia. It is a debilitating disorder both medically and socially and is the commonest cause of iron deficiency in the developed world and chronic illness in the developing world. There are two types of dysfunctional uterine bleeding; ovulatory (10%) and anovulatory (90%). DUB is a diagnosis of exclusion. For management of DUB, hormonal treatment is the first line therapy. **The drug of choice is progesterone.** Orally, it is available in various preparations like medroxyprogesterone acetate (MPA), norethindrone acetate, etc. Locally progesterone is available as vaginal suppositories, gel and progesterone releasing intrauterine devices like LNG IUS
- **Material and Methods:**A **Prospective comparative clinical study** was conducted by selection of 66 cases of dysfunctional uterine bleeding 33 in each group. Patient were compared according to their clinical symptom and amount of blood flow during menstruation. Assessment of amount of blood flow during menstruation and passage of clots was done as per PBAC score. **Even number** of patients was treated by **LNG-IUS** and **odd number** of patients was treated by oral **MPA 10mg BD** for 6 months and comparison was done.
- **Results:** In our study mean pre-treatment haemoglobin was significantly higher in MPA intervention group as compared to LNG-IUS group. In this study all cases were having PBAC >100 and majority of the patients in both the intervention groups used ≤5 pads per day and has clots/flooding with no statistically significant difference. LNG-IUS has been shown to have blood loss reduction and patient satisfaction rates comparable to those after trans-cervical endometrial resection
- **Conclusion:** Dysfunctional uterine bleeding is a significant health problem that impairs the quality of life. The perception of heavy bleeding is highly subjective, and management of the condition usually depends on both the amount of bleeding and the degree of discomfort. LNG-IUS seems to be better treatment modality for DUB in comparison of oral MPA. LNG-IUS is having a high success rate in controlling menstrual symptoms

**Keywords:** DUB, MPA, LNG-IUS.

**I. Introduction**

Dysfunctional uterine bleeding (DUB) is abnormal genital tract bleeding based in the uterus and found in the absence of demonstrable structural or organic disease. It is usually due to hormonal disturbances. In absence of ovulation and decrease production of progesterone, the endometrium responds to oestrogen stimulation with proliferation. <sup>[1]</sup>

There are two types of dysfunctional uterine bleeding; ovulatory (10%) and Anovulatory (90%). In ovulatory dysfunctional uterine bleeding, generally circulating ovarian hormone levels are normal and endometrial histology shows changes identical to women without dysfunctional uterine bleeding. Therefore, the major proposed mechanism of ovulatory dysfunctional uterine bleeding is impaired haemostatic mechanisms. In Anovulatory DUB, Low level of progesterone cause low level of PGF<sub>2alpha</sub>. There is decreased synthesis of PGF<sub>2alpha</sub> and ratio of PGF<sub>2alpha</sub>/PGE<sub>2</sub> is low and cause menorrhagia. <sup>[2]</sup>

Most ovulatory menstrual cycles last between 21 and 35 days. The duration of normal menstrual flow is generally 2-7 days, with most blood loss occurring within the first 3 days. <sup>[3]</sup> The average amount of bleeding during the menstrual cycle is 20 to 80 mL.

**Types of Dysfunctional Menstrual Bleeding**

- **Oligomenorrhea:** menses >35 days
- **Polymenorrhea:** menses <21 days
- **Metrorrhagia:** Menstrual bleeding occurring at irregular intervals or bleeding between menstrual cycles
- **Menorrhagia:** Regular menstrual cycles with excessive flow (technically more than 80 ml of volume) or menstruation lasting more than 7 days
- **Menometrorrhagia:** Menstrual bleeding occurring at irregular intervals with excessive flow or duration.



The complications of Dysfunctional uterine bleeding include anaemia, infertility, and endometrial cancer. With Acute Abnormal uterine bleeding, severe anaemia, hypotension, shock, and even death may result if prompt treatment and supportive care are not initiated. <sup>[4]</sup> Laboratory testing include but is not limited to a urine pregnancy test, complete blood count, ferritin, coagulation profile, thyroid function tests, gonadotropins and prolactin. Imaging studies can include transvaginal ultrasound, MRI, hysteroscopy.

For management of DUB hormonal treatment is the first line therapy, drug of choice is progesterone. It may be used locally or orally. Orally it is available in various preparations like medroxyprogesterone acetate, norethindrone acetate, etc. <sup>[5]</sup> Locally, progesterone is available as vaginal suppositories, gel and progesterone releasing intrauterine devices like LNG IUS. In cases of DUB LNG-IUS is used as an alternative treatment modality. It also acts by suppressing the endometrial proliferation. <sup>[6]</sup>

The LNG-IUS can decrease menstrual loss by up to 96% after 1 year of use. <sup>[7]</sup> After 5 years, the device should be removed and a new LNG-IUS device may be fitted immediately if desired. It is an excellent contraceptive when in situ and has the advantages of a 'fit and forget' method, rather than relying on patient compliance. The LNG-IUS is also associated with reduction of dysmenorrhea. <sup>[8]</sup> As its actions are local, progestogenic side effects are limited for example, nausea, headache, bloating, breast tenderness, and mood changes. Medroxyprogesterone Acetate (MPA) acts by inhibiting the production of gonadotropin, preventing follicular maturation and ovulation and also thins the endometrium. MPA is used to treat dysfunctional uterine bleeding.

This study was done to study the safety of levonorgestrel-intrauterine system and its comparison with oral medroxyprogesterone acetate in dysfunctional uterine bleeding.

## II. Materials and Methods

A **Prospective comparative clinical study** was conducted at Government medical college and associated Dr. Susheela Tiwari Govt. Hospital, Haldwani tertiary care centre of Uttarakhand.

All the patients of peri menopausal age group with dysfunctional uterine bleeding after excluding the structural and organic causes of abnormal uterine bleeding visiting Department of Obstetrics & Gynaecology in Government Medical College Haldwani and associated Dr.Susheela Tiwari Government Hospital, Haldwani, were the study population.

### Inclusion Criteria

1. All the patients willing for study
2. All the patients of DUB after excluding all the other causes of AUB

### Exclusion Criteria

1. Patients not willing for study
2. Pregnant or willing for issue
3. Any pelvic pathology (like fibroid, polyp, leiomyoma)
4. Malignancy of genital tract
5. With systemic diseases like- diabetes mellitus, hypertension, thyroid disorders, liver disease or any other serious medical illness
6. Those patients who will leave study in between

In patients showing Endometrial Hyperplasia without atypia in HPE two groups were made. Total 66 patients (33 patients in each group) randomly out of which one group i.e., even number of patients was treated by LNG-IUS and the other group i.e. odd number of patients was treated by oral medroxy progesterone acetate 10mg BD for 6 months and comparison was done. Patient were compared according to their clinical symptom and amount of blood flow during menstruation. Assessment of amount of blood flow during menstruation and passage of clots was done as per PBAC score.

Privacy and confidentiality were ensured throughout the study.

### Statistical tests

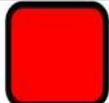
Categorical variables were analysed, and chi square test was used. Continuous variables were analysed using student 't' test.

### Ethical clearance

Written informed consent was taken from each patient/guardian after explaining about the study undertaken. Scientific and ethical clearance was sought from the Ethical Review Committee



### PBAC Scoring System

<b>Pads</b>		
<b>1 point</b>	For each lightly stained pad	
<b>5 points</b>	For each moderately stained pad	
<b>20 points</b>	For each completely saturated pad	
<b>Tampons</b>		
<b>1 point</b>	For each lightly stained tampon	
<b>5 points</b>	For each moderately stained tampon	
<b>10 points</b>	For each completely saturated tampon	
<b>Clots/Flooding</b>		
<b>1 point</b>	For each small clot (Australian 5 cent coin)	
<b>5 points</b>	For each large clot (Australian 50 cent coin)	
<b>5 points</b>	For each episode of flooding	



**III. Results**

Table 1- Distribution of the study participants according to the Age group in both the groups (MPA and LNG-IUS)  
 Table no 1 shows that majority of patients 19 and 16 belongs to age group 36-40 years in MPA and LNG-IUS GROUP.

Age group	MPA		LNG- IUS		Total
	No.	%	No.	%	
30-35	13	39.39	15	45.46	28
36-40	19	57.58	16	48.48	35
>40	01	3.03	02	6.06	3

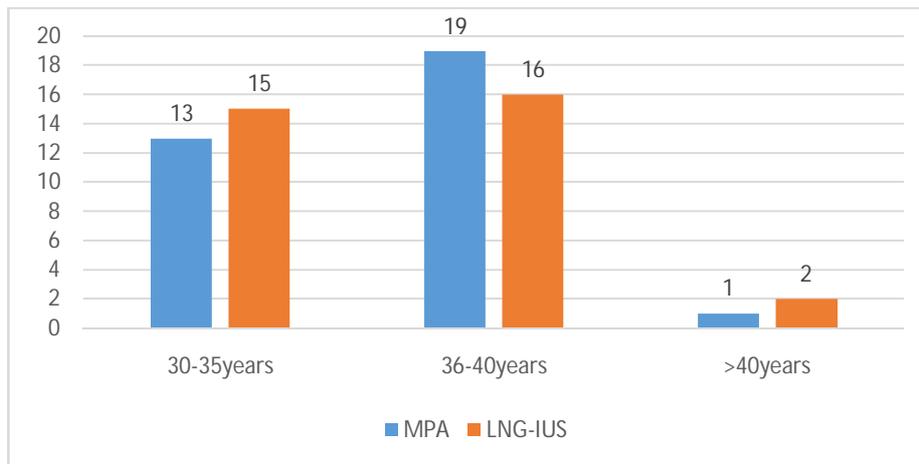


Fig: 1 Distribution of the study participants according to the Age group in both the groups (MPA and LNG-IUS)

Table 2- Comparison of Clinical Presentation among the two-intervention group.

Clinical Presentation		LNG-IUS		MPA		Total	P Value
		No.	%	No.	%		
Oligo menorrhoea followed by heavy menstrual bleeding	Yes	2	50.0	2	50.0	4	1.00
	No	31	50.0	31	50.0	62	
Heavy Bleeding during Menstruation	Yes	33	50.0	33	50.0	66	-
	No	0	0.0	0	0.0	0	
Intermenstrual Bleeding	Yes	7	63.6	4	36.4	11	0.32
	No	26	47.3	29	52.7	55	

Table 2 shows that in both the intervention group clinical presentation like oligo menorrhoea followed by heavy bleeding and heavy bleeding was seen in equal number of patients. Intermenstrual bleeding was seen in 63.6% patients in LNG-IUS intervention as compared to 36.4% in MA group however the difference was not statistically significant.

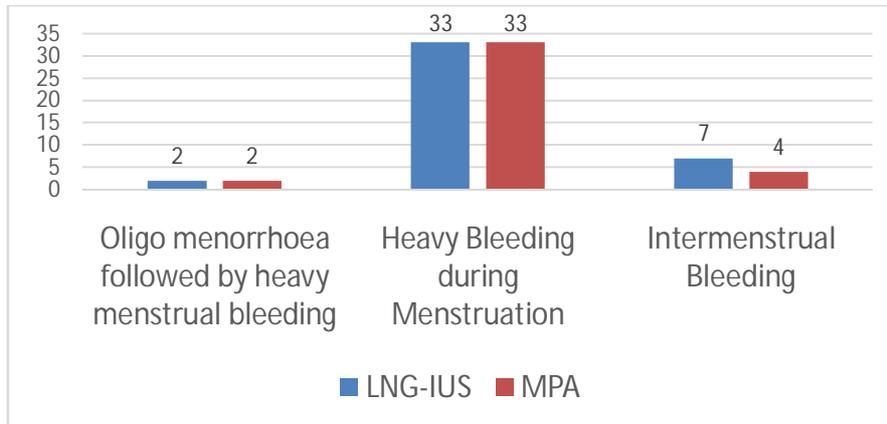


Fig 2. Comparison of Clinical Presentation among the two-intervention group.

Table 3- Comparison of Pre-treatment findings mean among the two-intervention group.

Characteristic	LNG-IUS		MPA		p Value
	Mean	SD	Mean	SD	
HB	8.50	0.85	9.14	0.54	0.001
Score	188.76	24.30	193.85	27.52	0.43

Table 3 shows that mean pre-treatment haemoglobin was significantly higher in MPA intervention group as compared to LNG-IUS group. However, the score had no significant difference in means in both the intervention group.

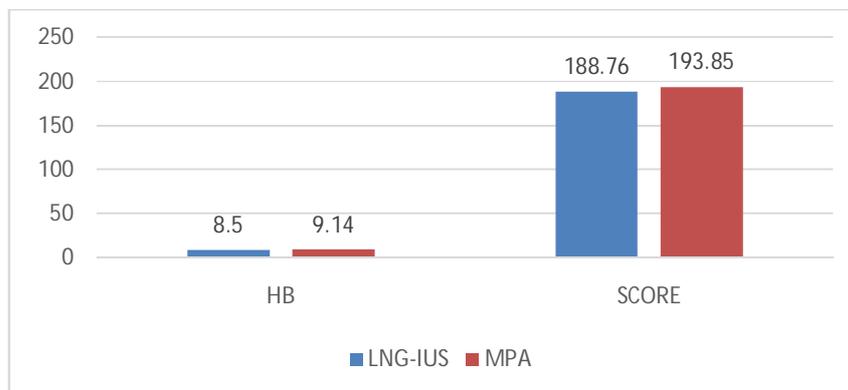


Fig 3. Comparison of Pre-treatment findings mean among the two-intervention group

Table 4- Comparison of Pre-treatment findings among the two-intervention group.

Clinical Presentation		LNG-IUS		MPA		Total	P Value
		No.	%	No.	%		
No of Pads/day	≤ 5	25	58.1	18	41.9	43	0.07
	>5	8	34.8	15	65.2	23	
Passage of clots during menses	Yes	31	48.4	33	51.6	64	-
	No	2	100.0	0	0.0	2	

Table 4 shows that majority of the patients in both the intervention groups used ≤5 pads per day and has clots/flooding with no statistically significant difference.

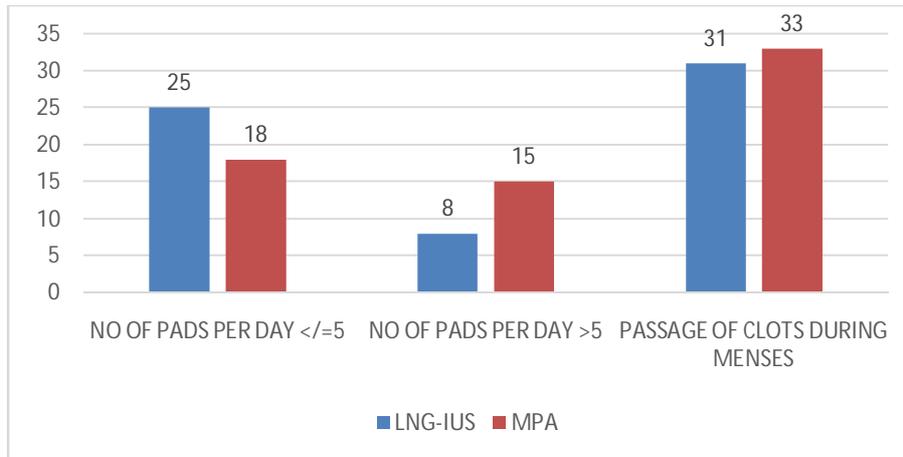


Fig 4. Comparison of Pre-treatment findings among the two-intervention group.

Table 5- Comparison of 1-month Post-treatment findings mean among the two-intervention group.

Characteristic	LNG-IUS		MPA		p Value
	Mean	SD	Mean	SD	
Hb	9.32	0.78	9.48	0.50	0.32
Score	110.36	25.08	125.18	25.21	0.02

Table 5 shows that after 1 moth of treatment there was no significant difference in the mean haemoglobin in the two-intervention group. However, the score was significantly less in LNG-IUS intervention group as compared to MPA group

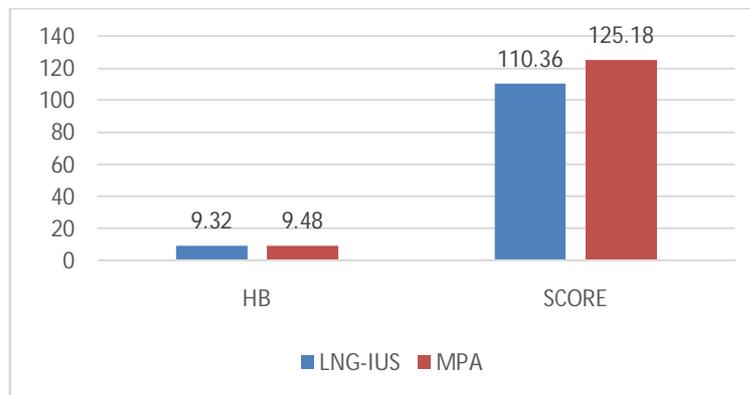


Fig 5. Comparison of 1month Post-treatment findings mean among the two-intervention group

Table 6- Comparison of 1-month Post-treatment findings among the two-intervention group.

Clinical Presentation		LNG-IUS		MPA		Total	P Value
		No.	%	No.	%		
No of Pads/day	≤ 5	33	50.0	33	50.0	66	-
	>5	0	0.0	0	0.0		
Passage of clots during menses	Yes	6	46.2	7	53.8	13	0.76
	No	27	50.9	26	49.1		

Table 6 shows that after 1 month of intervention all of the patients on both the groups used <5 pads per day and majority had no complain of clots/flooding.

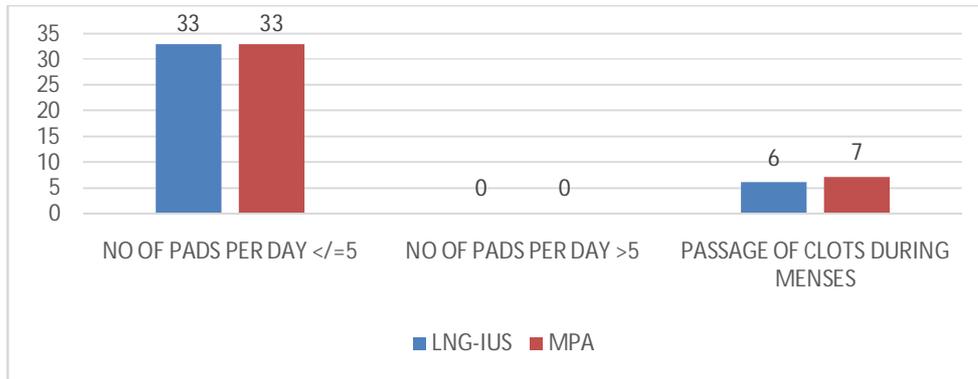


Fig 6. Comparison of 1-month Post-treatment findings among the two-intervention group

Table 7- Comparison of 3-month Post-treatment findings mean among the two-intervention group.

Characteristic	LNG-IUS		MPA		p Value
	Mean	SD	Mean	SD	
Hb	10.25	0.54	9.89	0.45	0.005
Score	67.79	24.37	97.42	15.06	0.001

Table 7 shows that after 3 months of treatment mean haemoglobin was significantly higher and mean score was significantly lower in LNG-IUS intervention group as compared to MPA group.

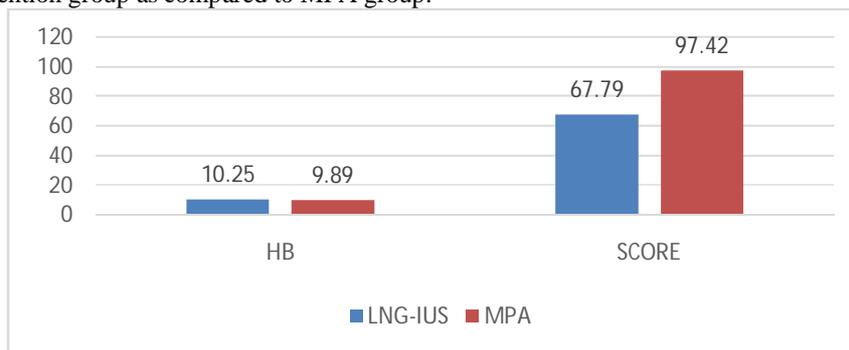


Fig 7. Comparison of 3-month Post-treatment findings mean among the two-intervention group

Table 8- Comparison of 3-month Post-treatment findings among the two-intervention group.

Clinical Presentation		LNG-IUS		MPA		Total	P Value
		No.	%	No.	%		
No of Pads/day	$\leq 5$	33	50.0	33	50.0	66	-
	$>5$	0	0.0	0	0.0	0	
Passage of clots during menses	Yes	0	0.0	0	0.0	0	-
	No	33	50.0	33	50.0	66	

Table 8 shows that after 3 month of treatment all the patients in both the intervention group used  $<5$ pads per day and had no complain of clots/flooding.

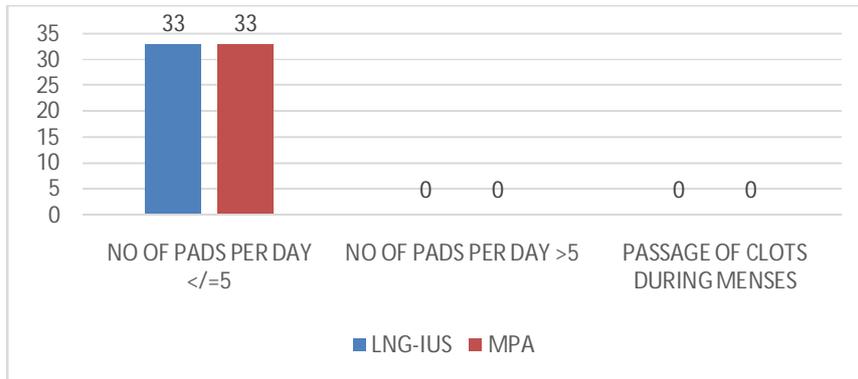


Fig 8. Comparison of 3-month Post-treatment findings among the two-intervention group

Table 9- Achievement of Score <math><100</math> after therapy

Time	PBAC Score <math><100</math>			
	LNG-IUS		MPA	
	No.	%	No.	%
Pre-Treatment	0	0.0	0	0.0
After 1 Month	18	54.5	0	0.0
After 3 Month	31	93.9	25	75.8

Table 9 shows that the PBAC score was more than 100 in all the patient's pre-treatment. However, the score of <math><100</math> was achieved in 54.5% of patients in LNG-IUS intervention group and none in MPA group after 1-month post-treatment. After 3-month post-treatment 93.9% of patients in LNG-IUS group achieved score <math><100</math> as compared to 75.8% patients in MPA Group.

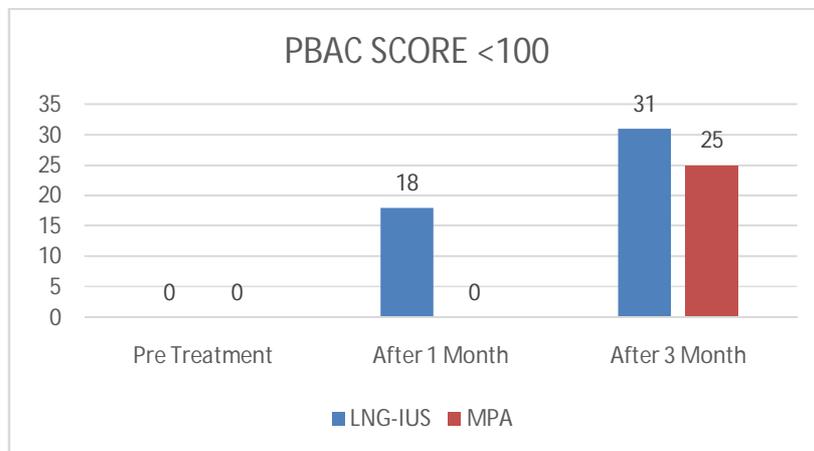


Fig 9. Achievement of Score <math><100</math> after therapy

Table 10- Side effect profile of LNG-IUS and MPA

Side Effect		LNG-IUS		MPA		Total
		No.	%	No.	%	
Nausea	Yes	0	0	3	09.09	3
	No	33	100	30	90.91	63
Vomiting	Yes	0	0	0	0	0
	No	33	100	33	100	66
Mood Change	Yes	0	0	0	0	0
	No	33	100	33	100	66
Headache	Yes	1	3.03	2	6.06	3
	No	32	96.97	31	93.94	63



Table 10 shows that LNG-IUS intervention group has better side effect profile than MPA intervention group.

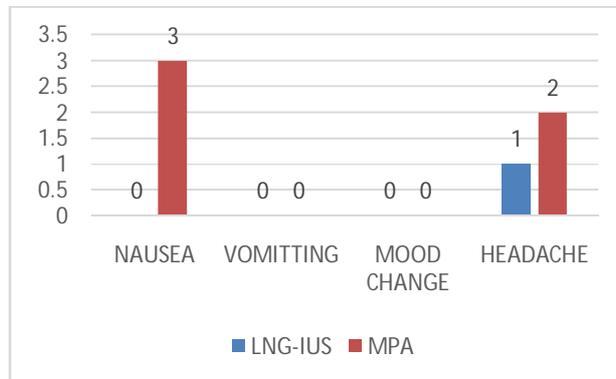


Fig 10. Side effect profile of LNG-IUS and MPA

#### IV. Discussion

This study was conducted in the Department of obstetrics and gynecology, Government Medical College and associated Dr. Susheela Tiwari Hospital, Haldwani (Uttarakhand) from January 2019 to September 2020 by selection of 66 cases of dysfunctional uterine bleeding 33 in each group. The findings of this study and the other studies mentioned in the literature are compared here.

#### Clinical Presentation

In our study both the intervention group clinical presentation like oligo-menorrhoea (2 in each group) followed by heavy bleeding (33 in each group) and heavy bleeding was seen in equal number of patients. Intermenstrual bleeding was seen in 63.6% patients in LNG-IUS intervention as compared to 36.4% in MA group however the difference was not statistically significant. Similar findings were seen in study by **Gupta JK et al<sup>[9]</sup>** with 80% and 81% of patients each in medicine group and LNG group with heavy menstrual bleeding. While in study by **Gupta R et al<sup>[10]</sup>** menorrhagia and polymenorrhagia was found to be in 33.3% and 20% patient in DUB group. **Singh K et al<sup>[11]</sup>** had 69% patient with heavy menstrual bleeding in their study.

#### Pretreatment Finding

In our study mean pre-treatment haemoglobin was significantly higher in MPA ( $9.14 \pm 0.54$ ) intervention group as compared to LNG-IUS ( $8.50 \pm 0.85$ ) group. However, the score (LNG:  $188.76 \pm 24.30$  and MPA:  $193.85 \pm 27.52$ ) had no significant difference in means in both the intervention group. Majority of the patients in both the intervention groups used  $\leq 5$  pads per day and has clots/flooding with no statistically significant difference. Similar results were observed in study by **Pathak A et al<sup>[12]</sup>** with mean haemoglobin level of  $7.434 \pm 0.933$  and  $7.466 \pm 1.041$  in LNG and MPA group respectively whereas mean PBAC score was  $242.88 \pm 93.36$  and  $246 \pm 89.87$  respectively in LNG and MPA group which is higher than our study. Similar to **Pathak A et al<sup>[12]</sup>** **Gupta R et al<sup>[10]</sup>**.

In this study all cases were having PBAC  $>100$  similarly in an article published on a randomized controlled trial conducted by **Robert et al<sup>[13]</sup>** and **Pathak A et al<sup>[12]</sup>** all patients with menorrhagia were having PBAC Scores  $>120.8$ .

In our study majority of the patients in both the intervention groups (58.1% and 41.9%) used  $\leq 5$  pads per day and has clots/flooding (48.4% and 51.6%) with no statistically significant difference.

#### 1 Month Post-Treatment

In our study, after 1 month of treatment there was no significant difference in the mean haemoglobin in the two-intervention group (LNG:  $9.32 \pm 0.78$ , MPA:  $9.48 \pm 0.50$ ). However, the score was significantly less in LNG-IUS ( $110.36 \pm 25.08$ ) intervention group as compared to MPA group ( $125.18 \pm 25.21$ ).

Similar rise in hemoglobin level (LNG:  $8.16 \pm 0.98$ , MPA:  $7.806 \pm 1.02$ ), and reduction in score is seen in (LNG:  $145.32 \pm 79.29$ , MPA:  $206.52 \pm 84.68$ ) was seen in study by **Pathak A et al<sup>[12]</sup>**. Similarly, **Gupta R et al<sup>[10]</sup>** found reduction of score to 99.5-391.5 from the initial value of 334.2 to 550.5. Study by **Dhamangaonkar PC et al<sup>[14]</sup>** shows MBL reduced by 95% in 1 year and 100% by 2 years with Hb rise of 7.8gm%. Amenorrhoea was found 100% by 2 year follow up. 5.7% had hysterectomy and the satisfaction rate was 91.42% in **Erali et al<sup>[15]</sup>**, had 71-95% reduction in objectively measured MBL and around 50% women had amenorrhoea. Hysterectomy was needed only for 6% and satisfaction rates was 91.4%. According to the ACOG (American College of Obstetricians and Gynaecologists), <sup>[16]</sup> the LNG-IUS appears to reduce menstrual blood loss significantly in women with HMB.



### 3 Month Post-Treatment Findings

In our study after 3 months of treatment mean haemoglobin(LNG:  $10.25 \pm 0.54$ , MDPA:  $9.89 \pm 0.045$ ) was significantly higher and mean score (LNG:  $67.79 \pm 24.37$ , MDPA:  $97.42 \pm 15.06$ ) was significantly lower in LNG-IUS intervention group as compared to MPA group patients in both the intervention group used <5 pads per day and had no complain of clots/flooding. Similar rise in haemoglobin level (LNG:  $8.958 \pm 0.88$ , MDPA:  $7.992 \pm 1.0078$ ), and reduction in score is seen in (LNG:  $108.6 \pm 70.887$ , MDPA:  $166.1 \pm 77.78$ ) was seen in study by **Pathak A et al**<sup>[12]</sup>

Similarly, **Gupta R et al**<sup>[10]</sup> found reduction of score to 24.0 to 164.0 from the initial value of 99.5 - 391.5 at one month with 75% patients had normal periods or oligomenorrhea at 9 months follow-up. Eight patients developed amenorrhea. None of the patients followed up till 9 months had persistent menorrhagia or polymenorrhoea. Normal periods or oligomenorrhea at 9 months follow-up. Five patients developed amenorrhea. Only three patients had persistent menorrhagia at 9 months. Hol KV et al after six months of use of LNG-IUS found reduction in no of days of menses from 6.8days to 2.7days and 85.7% reduction in volume of menstrual blood flow.

In our study, pre-treatment PBAC score was more than 100 in all the patients. However, the score of <100 was achieved in 54.5% of patients in LNG-IUS intervention group and none in MPA group after 1-month post-treatment. After 3-month post-treatment 93.9% of patients in LNG-IUS group achieved score <100 as compared to 75.8% patients in MPA Group.

Study by **Gupta R et al**<sup>[10]</sup> in DUB patients, with 9-month follow-up, the treatment failure rate was only 3.4% (1 out of 29 patients), and the median PBAC score reduced by 95% at 9 months. Subjectively also, patients reported reduction in blood loss starting as early as 1 month after the insertion, which was statistically significant. At 9 months, the DUB patients reported a median 90% reduction in MBL, and 82.8% of the patients were either 'very satisfied' or 'satisfied' with the treatment. The Levonorgestrel-releasing intra-uterine system (LNG-IUS) produces atrophy of the glandular epithelium, prominent decidualization of the stroma and suppression of the spiral artery formation as well as large, thin-walled, dilated vessels.

LNG-IUS has been shown to have blood loss reduction and patient satisfaction rates comparable to those after trans-cervical endometrial resection. Given the fact that LNG-IUS requires less skills, is much less invasive, and has no operative risks, this should be the treatment of choice for DUB. A study by Irvin et al, in which the efficacy and acceptability of Levonorgestrel Intra Uterine System compared to the high dose of norethisterone 5mg three time daily from day 5th to 26th of the cycle for three cycle were observed.<sup>[58]</sup> Reduction of the blood by Levonorgestrel Intra Uterine System was 94% and with oral norethisterone 87% after three While 76% of the women wish to continue levonorgestel intrauterine system compared to 22% in norethisterone group. Our results are comparable to the above study though there was no control group.

Regarding amenorrhea, as the LNG-IUS is a reversible device placed in the uterus, it may be reversible for patient's menstrual period following treatment. 24 months follow-up appointment, the total cost of treatment and the PBAC scores were significantly decreased in patients treated with the LNG-IUS. However, the patients' quality of life, measured by the SF-36 scores, and hemoglobin levels were not significantly different between the two treatment groups. Although the LNG-IUS is more likely to be associated with long-term amenorrhea, it is more efficient in reducing patient blood loss (PBAC scores) and more cost-effective compared with TBA.

The results of study by **Gupta JK et al**<sup>[9]</sup> show that women's experiences and expectations of medical treatments for HMB vary considerably and change over time. In addition to a range of practical considerations for treatments, they emphasize that practitioners should consider that rate of menstrual blood flow, pain and well-being, alongside wider functioning socially or at work, may be as or more important to women as menstrual blood loss experienced. Women had high expectations of a prompt effect from treatments. Unpredictable irregular bleeding with the LNG-IUS was more problematic than the volume of blood loss for women in this study, owing to its impact on their established behavioral coping mechanisms for HMB.

### V. Conclusion

Dysfunctional menstrual bleeding is a significant health problem that impairs the quality of life. The perception of heavy bleeding is highly subjective, however, and management of the condition usually depends on both the amount of bleeding and the degree of discomfort found acceptable by the individual woman. Hysterectomy was once the only surgical option for heavy menstrual bleeding, and almost half of the hysterectomies currently performed worldwide are carried out for this reason, but it is a major surgical intervention associated with surgical risks and substantial costs.



Endometrial destruction techniques, which aim to destroy or remove the endometrial tissue, include roller-ball ablation and trans-cervical resection under direct hysteroscopic vision and second generation non-hysteroscopic techniques. LNG-IUS provides a nonsurgical alternative, which is reversible and spares fertility.

As this study was conducted in the department of obstetrics and Gynaecology in Government medical college Haldwani associated Dr. Susheela Tiwari Government Hospital which covers approximate population of 622506 and most of the population lives in hilly areas. It happens to be very difficult for the patients to come for follow up in the hospital.

As duration of action of LNG – IUS is 5 years so follow up visits in OPD are less. LNG IUS is fit to forget method. While in MPA non-compliance and multiple frequent visits are the main problems. Patient has to remember to take the drug every day.

By analysing the results of present study, LNG-IUS seems to be better treatment modality for DUB in comparison of oral MPA. LNG IUS can be a good alternative to the medical and surgical treatment for menorrhagia in DUB with good efficacy and lesser side-effects. It dramatically reduces the amount of bleeding in a few months. Systemic side effects like nausea, vomiting, headache, fatigue, mood changes etc. are less seen with LNG IUS. LNG IUS has better patient satisfaction rate. This study is of short duration and having smaller sample size of 33 patients in each group. However, to get more conclusive results longer studies with larger sample size are suggested.

LNG-IUS is having a high success rate in controlling menstrual symptoms, thereby improving the quality of life and avoiding hysterectomy in women with abnormal uterine bleeding. Due to its reversibility and contraceptive action, it may be the first line of treatment in younger women who desire contraception as well. LNG IUS had minimal side effect leading to good continuation rate. This evidence may be useful to gynaecologists in choosing a therapy for patients with UBB. Nevertheless, furthermore well-designed RCTs are required to explore the differences between the LNG-IUS and MPA.

It provides a wide spectrum of benefit beyond their contraceptive capabilities Side effect can be reduced by careful pre insertion counselling and insertion difficulty can be minimized by a skill person who are trained in fitting the device.

## VI. References

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