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Research Article

**PROSPECTIVE OBSERVATIONAL STUDY OF THE  
MANAGEMENT OF ABNORMAL UTERINE BLEEDING IN  
NON-PREGNANT WOMEN**Husna rahman<sup>1</sup>, Reeba sami<sup>2</sup>, S Divya<sup>3</sup>, Uzair khan<sup>4</sup>, Dr. Anupama koneru<sup>4</sup><sup>1</sup>Sultan-ul-uloom College of Pharmacy, Hyderabad, Telangana

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**Abstract:**

*Abnormal uterine bleeding (AUB) is a common complaint that affects large numbers of women from puberty to menopause. It negatively affects health by causing anemia, and impacts the quality of life of women affected. AUB also has an economic impact for both women and society. Therefore, it should not be under- or overestimate and diagnosis, investigations and treatment should be proposed, taking into account the scientific data available in the current state of medical knowledge. Using the new terminology and etiologic classification of AUB is essential to communicate properly around the subject. The evaluation of the bleeding includes self-report and more objective methods.*

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**INTRODUCTION:****Aims and objectives:****Aim:**

To study the management of AUB in non-pregnant females.

**Objectives:**

The two main objectives of managing acute AUB are:

- To control the current episode of heavy bleeding and
- To reduce menstrual blood loss in subsequent cycles

**literature review:**

In a recently published research article, Matteson and colleagues<sup>18</sup> Examined the practice patterns and attitudes from a United States sample of obstetricians and gynecologists regarding the medical treatment of women with AUB. The authors reported that practicing Obstetrician-gynecologists most frequently selected combined oral Contraceptives for the treatment of both ovulatory and anovulatory heavy menstrual bleeding and that participants lacked an overall awareness of current evidence on effectiveness of common treatment options for AUB. Nonsurgical treatment options—Pharmacologic therapies used for

Treatment of AUB in the ambulatory setting include estrogens, Progestogens, combination (estrogen and progestogen) hormonal Formulations, nonsteroidal anti-inflammatory drugs, antifibrinolytics, and Gonadotropin releasing hormones. Medical interventions are generally Considered first line treatment.<sup>19,20</sup> Surgical intervention is usually Reserved for women with persistent bleeding that does not respond to Medical therapy or for women who have finished childbearing and do Not wish to indefinitely continue medical therapy Current recommendations from professional societies including the American College of Obstetricians and Gynecologists (ACOG),<sup>22-25</sup> the American Academy of Family Physicians (AAFP),<sup>21</sup> and the National Institute for Clinical Excellence (NICE)<sup>26</sup> include oral contraceptives, Progestins, NSAIDs, levonorgestrel IUD, and antifibrinolytics for management of irregular bleeding and abnormal cyclic bleeding. Combined oral contraceptives are commonly used to manage abnormal bleeding associated with ovulation. The American College of Obstetrics and Gynecologists 2010 Practice Bulletin for no contraceptive uses of hormonal contraceptives recommends combined oral contraceptives as a reasonable choice to regulate and reduce menstrual bleeding, based on good and consistent scientific evidence.<sup>24</sup>

However, according to a 2009 Cochrane systematic review,<sup>27</sup> there is insufficient evidence to establish the effectiveness of the oral contraceptive pill compared with other medical therapies, placebo, or no therapy for the treatment of heavy menstrual bleeding.<sup>27</sup> In a clinical review for diagnosis and management of abnormal uterine bleeding,<sup>20</sup> authors assert that combined oral contraceptives are likely beneficial for treatment of anovulatory (i.e., acyclic) abnormal uterine bleeding but there is lack of good quality data to support their use in cyclic abnormal bleeding.<sup>20</sup> The combined oral contraceptive is also known to cause abnormal bleeding patterns. Information is needed about the number needed to treat (NNT) for women with AUB and the number need harm (NNH) for adverse effects

**Ethical committee approval:**

We have taken approval from the IEC of Fehmi Care Hospital to conduct this project.

**METHODOLOGY:**

**STUDY SITE:** Study is being conducted in Fehmi Care Hospital.

**STUDY DURATION:** 6 months.

**STUDY DESIGN:** The investigation is a prospective case – control study.

**SAMPLE SIZE:** The estimated sample size is approximately of 100 patients.

**DATA COLLECTION:** The data will be collected from the inpatient and outpatient cases forms, Sheets and lab reports from patients who are eligible according to inclusion criteria that are enrolled in the study.

**SOURCE OF DATA:** The relevant data is collected using a patient profile form designed in such a way which includes all variables required for the study.

**Inclusion criteria:**

- Non pregnant women with structural abnormalities in endometrium noted in the USG scan.
- Women complaining of dysmenorrhea, menorrhagia and metrorrhagia over several consecutive cycles.

**Exclusion criteria:**

- Existing pregnancy
- Women on hormone replacement therapy
- Patients with known or suspected malignancy (cervical, endometrial, ovarian)
- Abnormal bleeding (i.e., quantity, frequency, duration, or regularity) from the uterus not caused by pelvic disease, uterine fibroids, ovarian cysts, endometrial Polyps,

coagulation disorders, malignancy, inflammation, medical illness, or pregnancy.

**Expected outcomes:**

- Evaluation and comparison of patients with abnormal uterine bleeding.

- Identification and Evaluation of underlying causes or disorders causing abnormal uterine bleeding.
- Monitoring of therapy given for AUB
- Study of correlation between Endometrial thickness and medical/surgical management.
- Estimation of occurrence of AUB in post menopausal women.

**MEDICATION CHART:**

SL.NO	GENERIC NAME	BRAND NAME	DOSE	FREQ	ROA	INDICATION	DAYS

# ANNEXURE

## FINAL DIAGNOSIS:

## PHYSICAL EXAMINATION:

Height:	Weight:	BMI:
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Level of Consciousness:	
B.P:	Temperature:
Pulse Rate:	Respiratory Rate:
SpO2:	

## SYSTEMIC EXAMINATION:

CVS:
RS:
P/A:
CNS:

Date of start of Dialysis:	
Dialysis: Y/N	
Haemodialysis <input type="checkbox"/>	Peritoneal Dialysis <input type="checkbox"/>
BP before dialysis:	BP after dialysis:

## LAB INVESTIGATIONS:

Test	Impressions
Chest X-Ray:	
2D-ECHO:	
ECG:	

**PATIENT PROFILE FORM**

Patient Name:	Admission No.:
Age:	Admission date:
Gender:	Discharge date:
Dept./Unit:	Phone No.:

Complaints on Admission:

Past Medical History:

Previous Allergies:

Past Medication History:

Social History:

Occupation:

Diet:

Alcohol/Smoking:

Marital Status: M/S

Family History:

Surgical History:

- **PROGRESS NOTE:** So far we collected 50 cases and they are being noted in excel sheets for furth

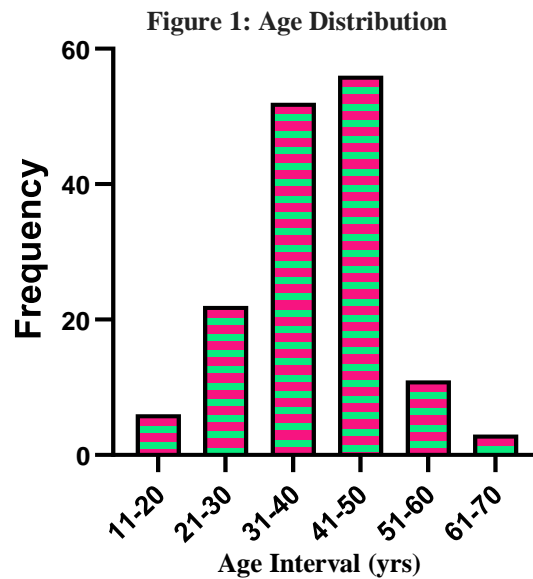
**RESULTS:**

- Sample size =150
- Software used-SPSS version 26 and excel sheet.
- P value <0.05 is considered significant since CI is 95%.

**Table 1: Age Distribution**

Age Interval (years)	N	Percentage
11-20	06	04
21-30	22	15
31-40	52	35
41-50	56	37
51-60	11	07
61-70	03	02

• The table indicating the age range of study population  
 Mean± SE is 39.53± 10.02



.Graph plotted which indicates the age distribution between 41-50 showed frequency of 56%.

**Table 2: Abnormal Uterine Bleeding**

Type	N	Percentage
Amenorrhea	09	06
Dysmenorrhea	106	71
Menorrhagia	80	53
Metrorrhagia	63	42
Post-menopausal bleeding	19	13
Polymenorrhagia	25	17
Oligomenorrhea	01	01
Passing clots	28	19

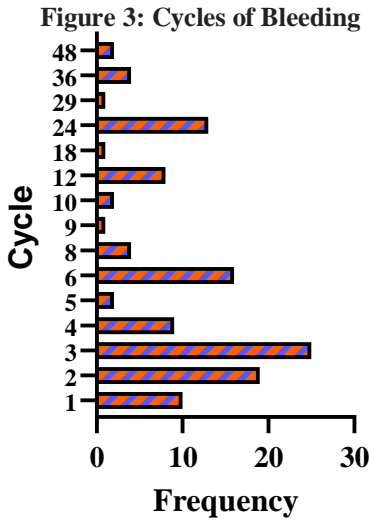
The table indicating the symptoms of AUB in study population and their percentage.

Graph plotted which indicates the symptoms of AUB in study population in which Dysmenorrhea showed higher frequency compared to other symptoms of 106%.

**Table 3: Cycles of Bleeding**

Cycle	N	Percentage
1	10	07
2	19	13
3	25	17
4	09	06
5	02	01
6	16	11
8	04	03
9	01	01
10	02	01
12	08	05
18	01	01
24	13	09
29	01	01
36	04	03
48	02	01

The table indicating the number of cycles of Abnormal bleeding.



Graph plotted which indicates the no. of cycles of Abnormal bleeding in study population, in which most patients have AUB from 3cycles.

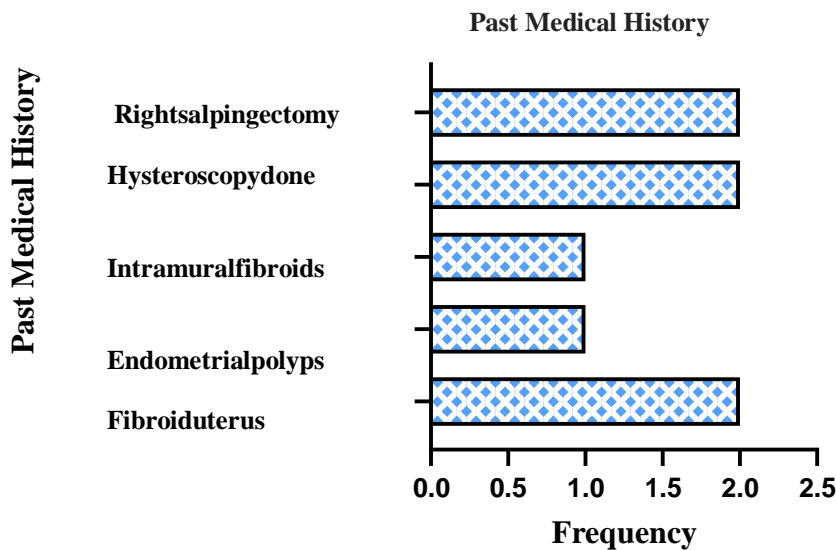
**Table 4: Past Medical History**

Past Medical History	N	Percentage
Fibroid uterus	02	01
Endometrial polyps	01	01
Intramural fibroids	01	01
Hysteroscopy done	02	01
Right salpingectomy	02	01

The table

indicating the past medical history of study population.

**Figure 4:**



Graph plotted which indicates the past medical history and higher frequency of intramural fibroids, Hysteroscopy, and right salpingectomy history in study population was found.



Table 5: Past Medication History

Drug	N	Percentage
Tranexamic acid	10	07
Mefenamic acid	12	08
Ethinyl Estradiol	05	03
Ferrous fumarate +Folic acid	02	01
Progesterone	04	03
Norethisterone	02	01
Medroxyprogesterone acetate	04	03

The table indicating the past medication history of study population.

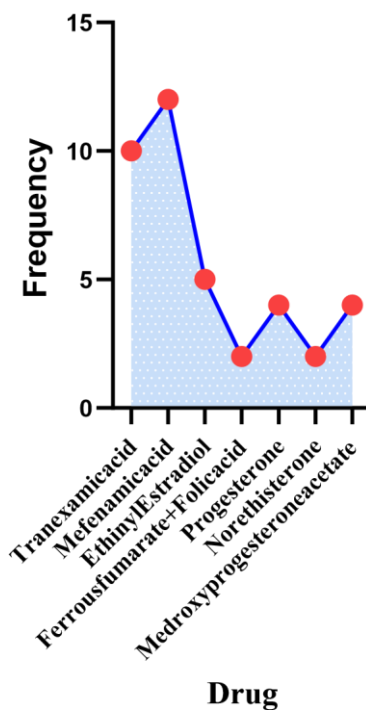


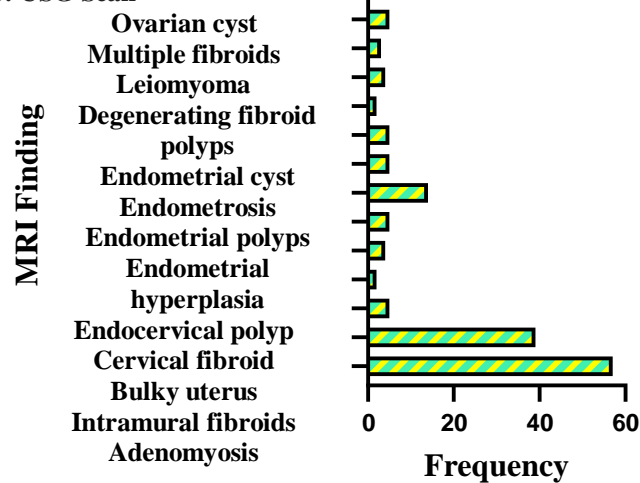
Figure 5: Past Medication History

Graph plotted which indicates the medication history and Mefanamic acid showed higher frequency in study population.

**Table 6: USG Scan**

<b>Finding</b>	<b>N</b>	<b>Percentage</b>
Adenomyosis	57	38
Intramural fibroids	39	26
Bulky uterus	05	03
Cervical fibroid	02	01
Endocervical polyp	04	03
Endometrial hyperplasia	05	03
Endometrial polyps	14	09
Endometriosis	05	03
Endometrial cyst	05	03
Degenerating fibroid polyps	02	01
Leiomyoma	04	03
Multiple fibroids	03	02
Ovarian cyst	05	03

The table indicates the USG scan of study population.

**Figure 6: USG Scan**

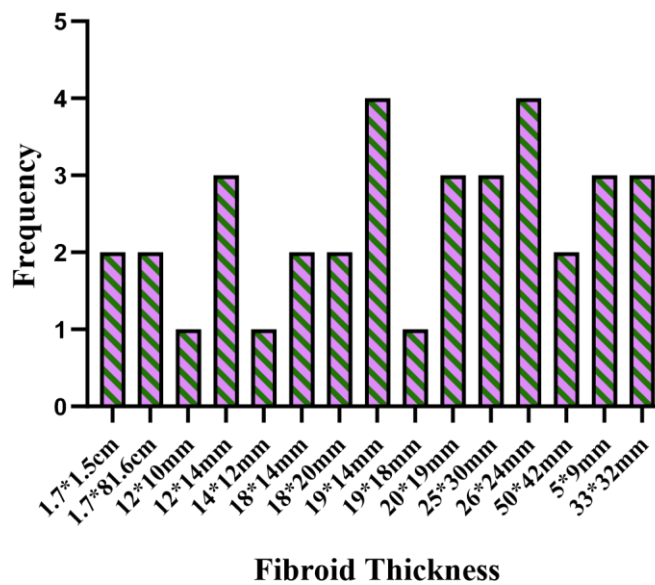
Graph plotted which shows the USG scan reports of study population which indicates the diagnosis of patient. Adenomyosis was diagnosed in most no. of patients showing highest frequency.

Table 7: Fibroid Thickness

Fibroid Thickness	N	Percentage
1.7 *1.5cm	02	01
1.7*81.6cm	02	01
12*10mm	01	01
12*14mm	03	02
14*12mm	01	01
18 *14mm	02	01
18 *20mm	02	01
19 *14mm	04	03
19* 18mm	01	01
20 *19mm	03	02
25 *30mm	03	02
26 *24mm	04	03
50 *42mm	02	01
5 *9mm	03	02
33 *32mm	03	02

The table indicates the fibroid thickness values of study population.

Figure 7: Fibroid Thickness

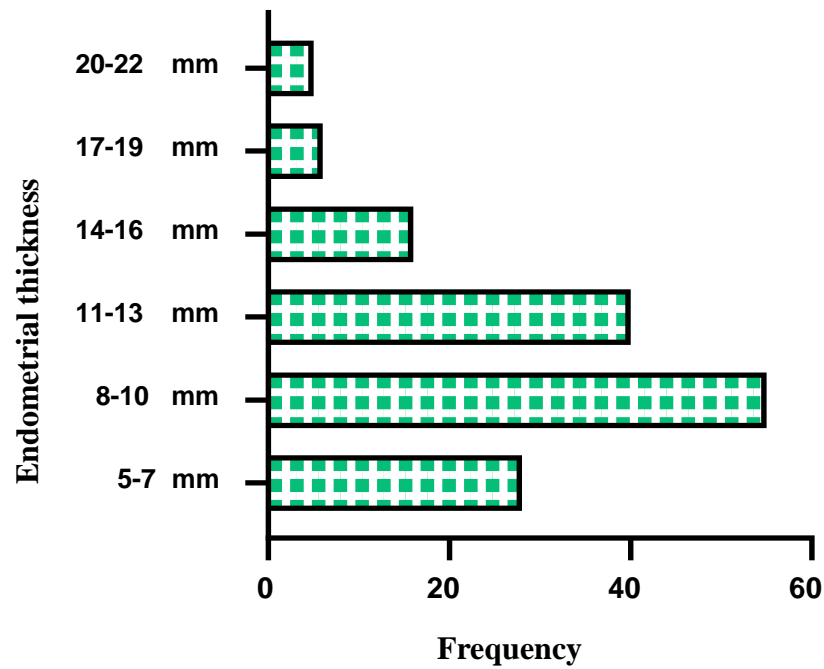


Graph plotted which shows the fibroid thickness; and showed higher frequency in 19\*14mm and 26\*24mm fibroid thickness.

Table 8: Endometrial Thickness

Endometrial Thickness	N	Percentage
5-7 mm	28	19
8-10 mm	55	37
11-13 mm	40	27
14-16 mm	16	10
17-19 mm	06	04
20-22 mm	05	03

The table indicating the Endometrial thickness of study population. Figure 8:  
Endometrial Thickness

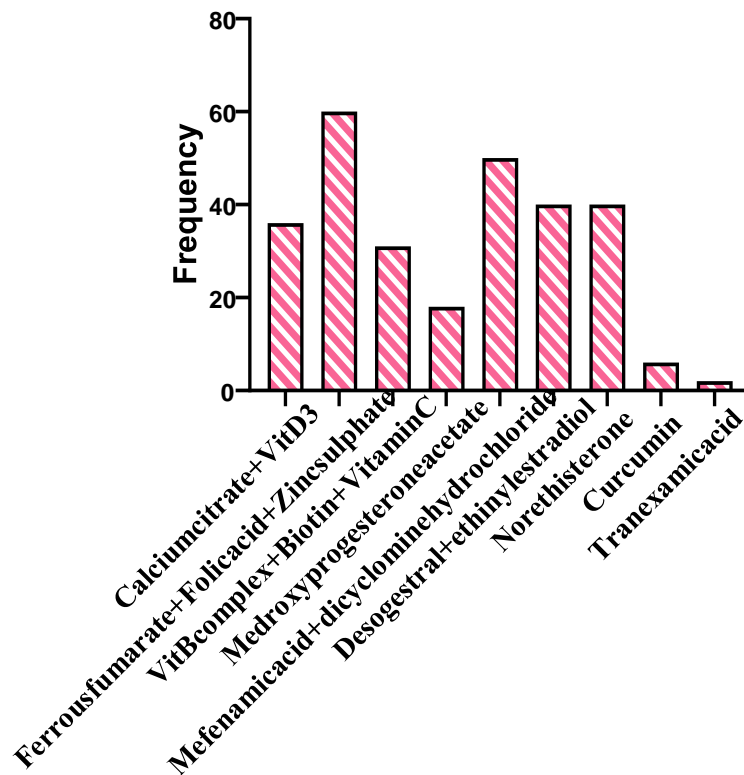


Graph plotted which indicates the Endometrial thickness and showed higher frequency in 8-10mm thickness of Endometrium.

**Table 9: Management of AUB**

Drug	N	Percentage
Calcium citrate + Vit D3	36	24
Ferrous fumarate + Folic acid + Zinc sulphate	60	40
Vit B complex + Biotin + Vitamin C	31	21
Medroxy progesterone acetate	18	12
Mefenamic acid + dicyclomine hydrochloride	50	33
Desogestrel + ethinylestradiol	40	27
Norethisterone	40	27
Curcumin	06	04
Tranexamic acid	02	01

Table indicates the drugs used in the management of AUB in study population.

**Figure 9: Management of AUB**

### Drug

Graph plotted which indicates the frequency of drugs used for AUB in study population. Ferrous fumarate+folic acid+zinc sulphate has the highest frequency.

Table 10: Surgery

Surgery	N	Percentage
Bilateral ovarian cystectomy	06	04
Bilateral salpingo-oophorectomy	03	02
Dilatation and curettage	02	01
Hysteroscopic polypectomy	11	07
Hysterectomy	02	01
Hysteroscopic guided biopsy	02	01
Endometrial biopsy	01	01
Hysteroscopy +endosaplings	12	08
IUS	02	01
TLH	14	09
Laparoscopic Endometriotic cystectomy	04	03
TLS	03	02
Laparoscopic myomectomy	06	04
Open adenomyomectomy	01	01

The table indicates the surgeries performed in study population.

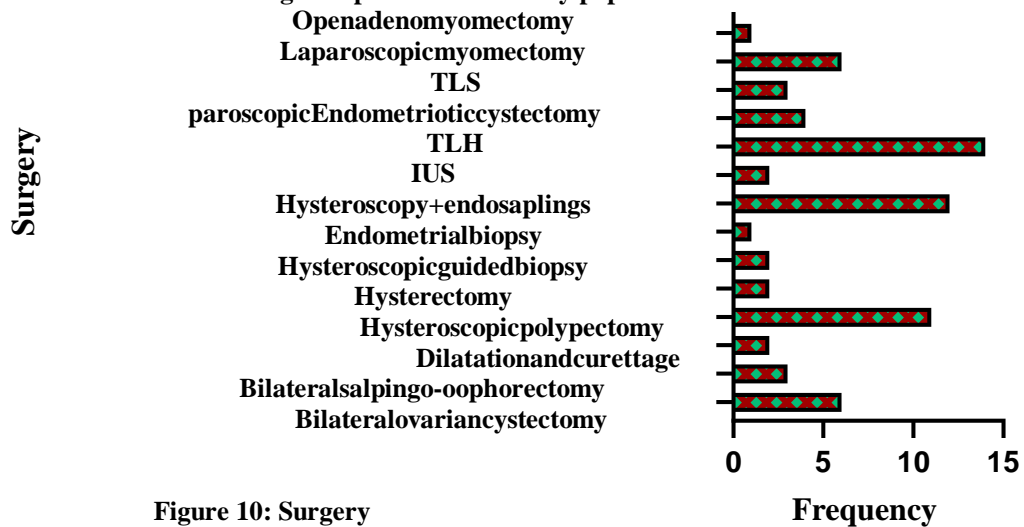


Figure 10: Surgery  
Graph plotted which indicates the surgeries done to the patients. TLH was performed on most patients.

DRUGS USED	FREQUENCY
Medroxy progesterone acetate	2
norethisterone	11
Ferrous fumerate+folic acid	5

Mefenamic acid	6
Desogestral+Ethinyl oestradiol	2
Calcium citrate D3	4
Vit B complex Biotin	1
Tranexamic acid	5
Hysteroscopic polypectomy	11

Table 11: Polyps Treatment.

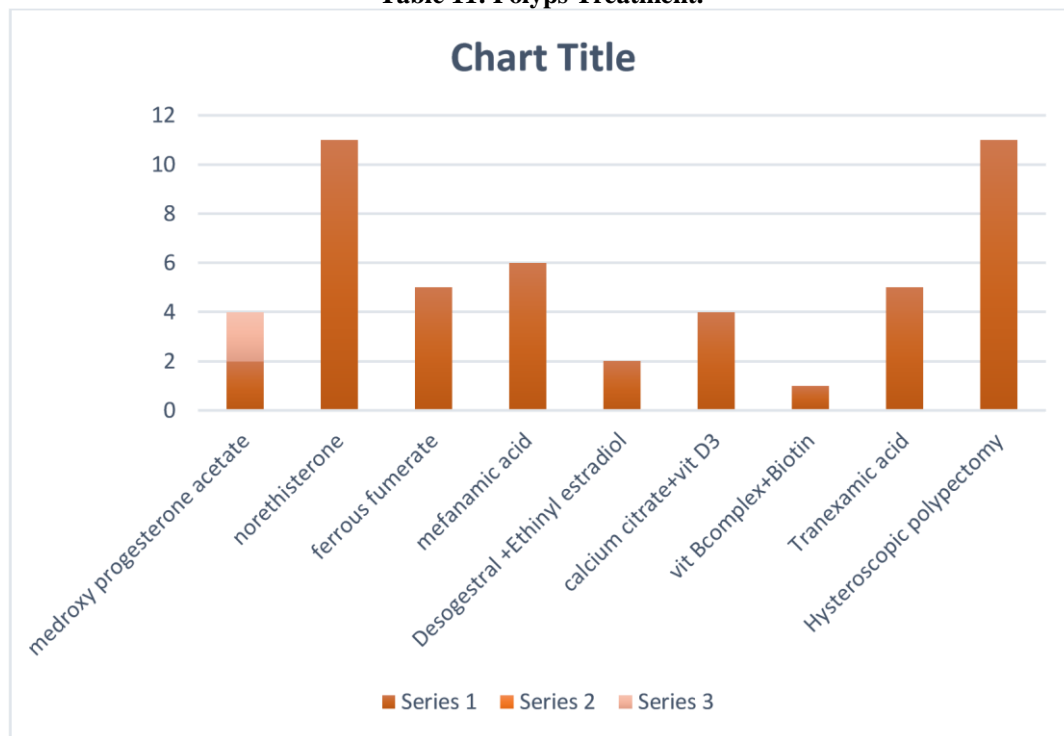
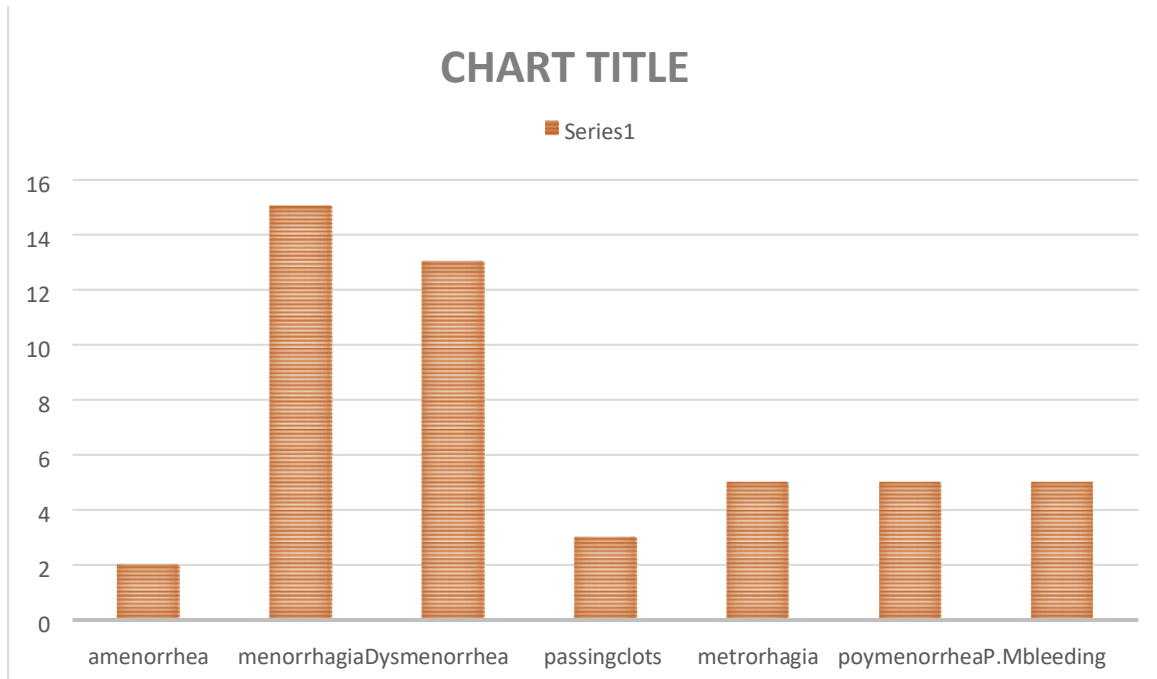


Figure 11: Polyps treatment.

Graph plotted which shows the management of Polyps. It shows the pharmacotherapy given for the treatment of Polyps in study population. Graph shows that hysteroscopic polypectomy was performed on most patients with polyps.



**Figure 12:symptoms of polyps**

**Table 12:symptoms of polyps.**

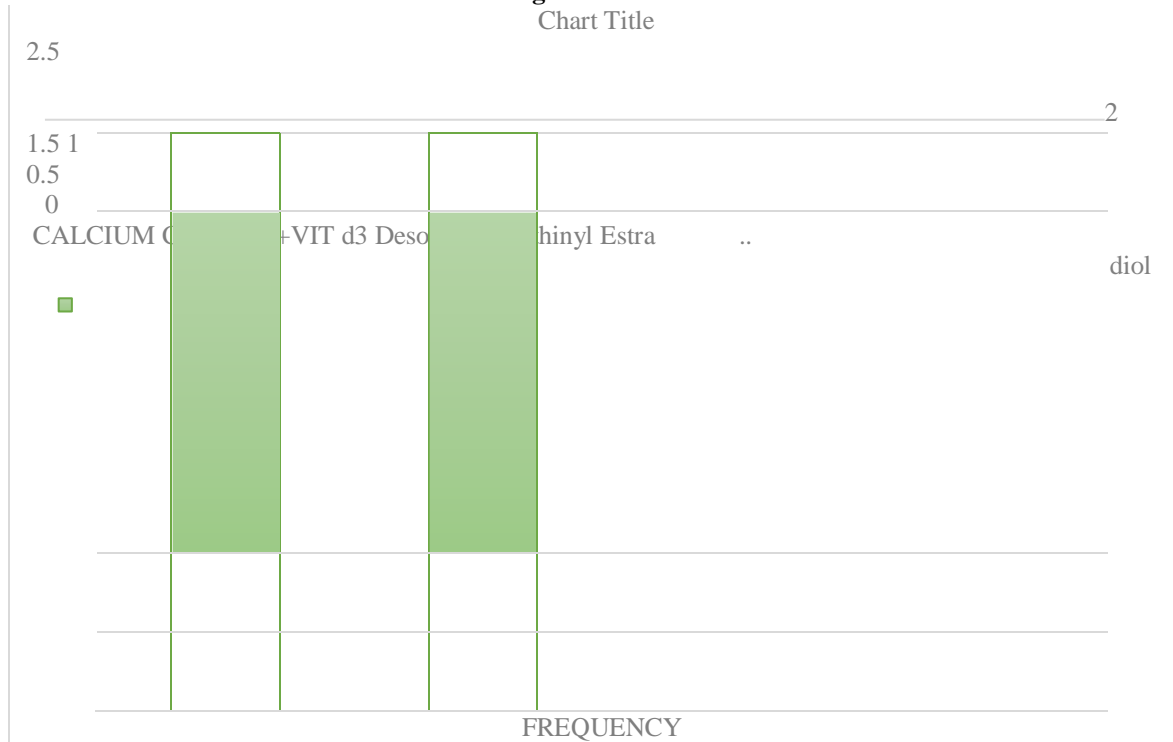
Symptom	frequency
Amenorrhea	2
Menorrhagia	15
Dysmenorrhea	13
Passing clots	3
Metrorrhagia	5
Polymenorrhea	5
Post menopausal bleeding	5

**Graph plotted indicating the symptoms of polyps with Menorrhagia and Dysmenorrhea being the most common symptoms.**



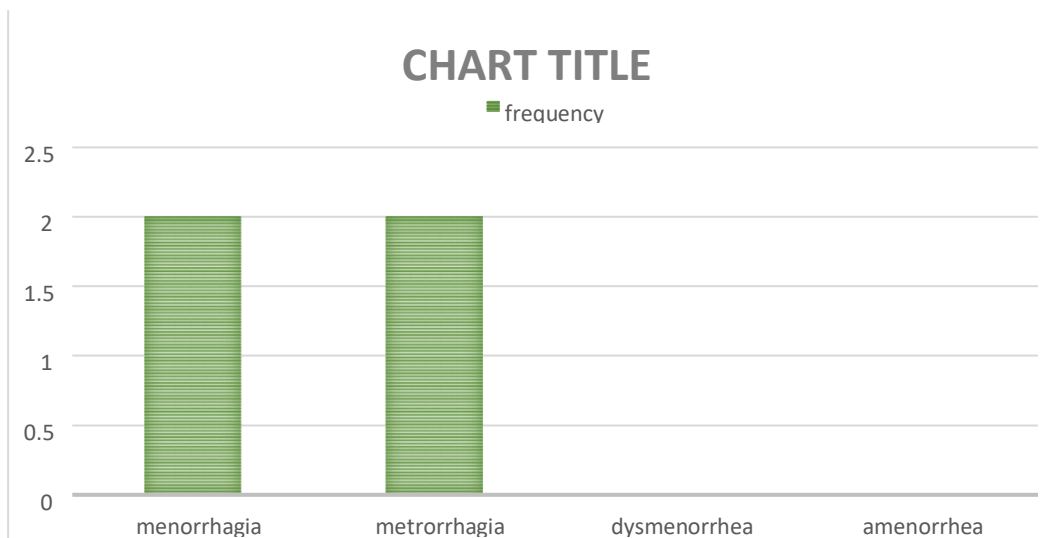
**CERVICAL FIBROIDS:**

**Figure 13:Treatment**  
Chart Title



Graph plotted which shows the drug treatment given to patients with cervical fibroids in study population. It shows that mainly only two drugs: calcium citrate= vit D3 and desgestral +Ethinyl estradiol were given for this.

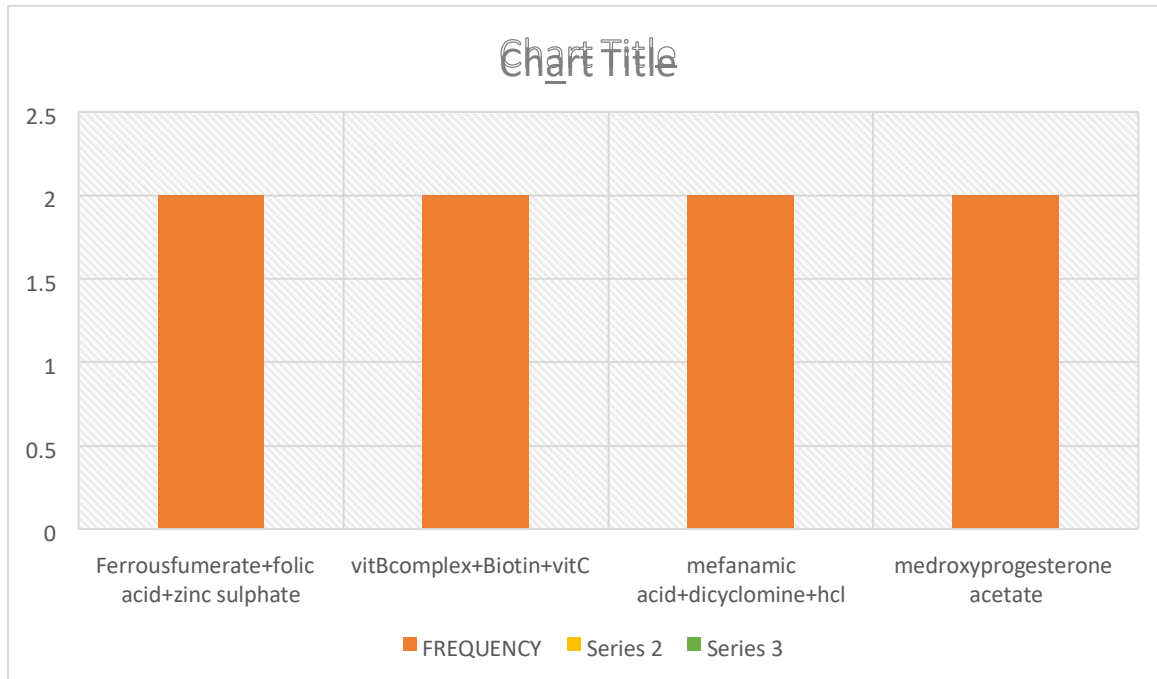
**Figure 13.2:Symptoms**



Graph plotted which shows the main symptoms of cervical fibroids.

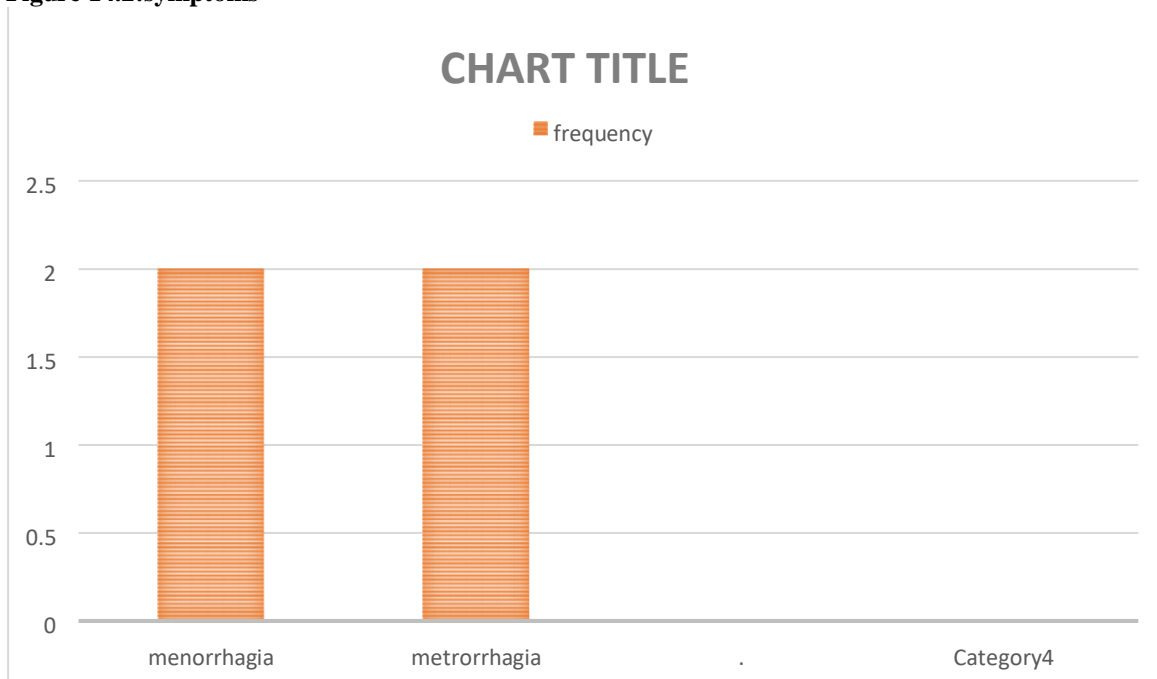
**MULTIPLE FIBROIDS:**

**Figure 14.1:Treatment**



Graph plotted which indicates the treatment given for multiple fibroids.

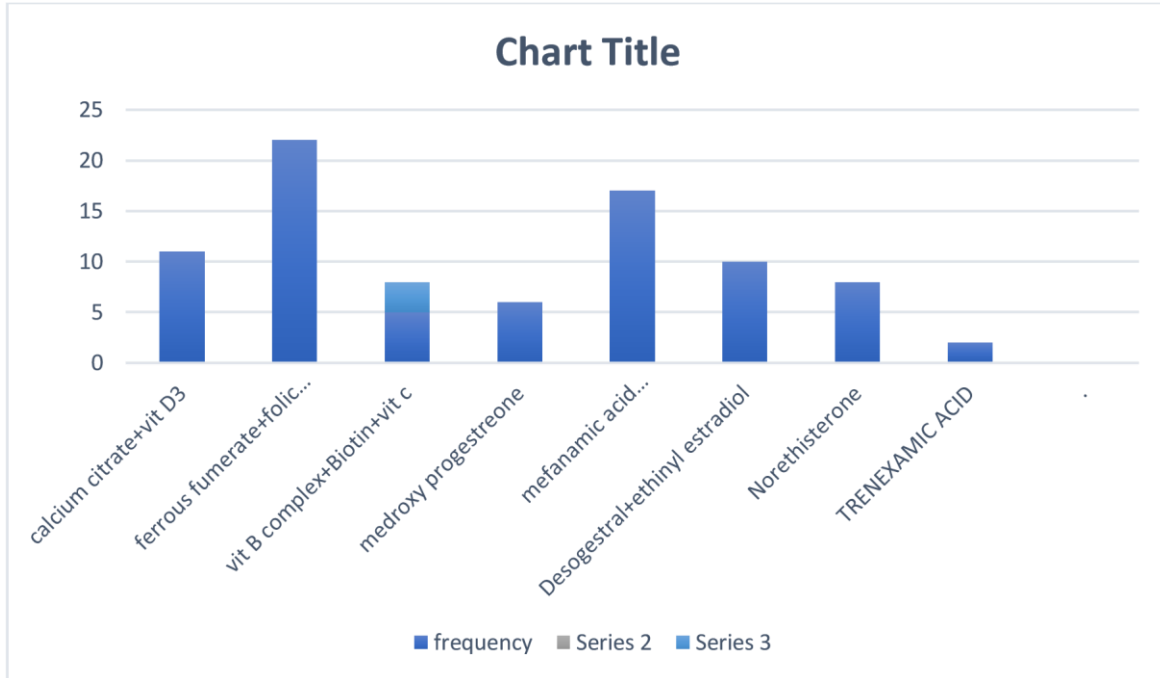
Figure 14.2:symptoms



Graph plotted which indicates the main symptoms of multiple fibroids in study population.

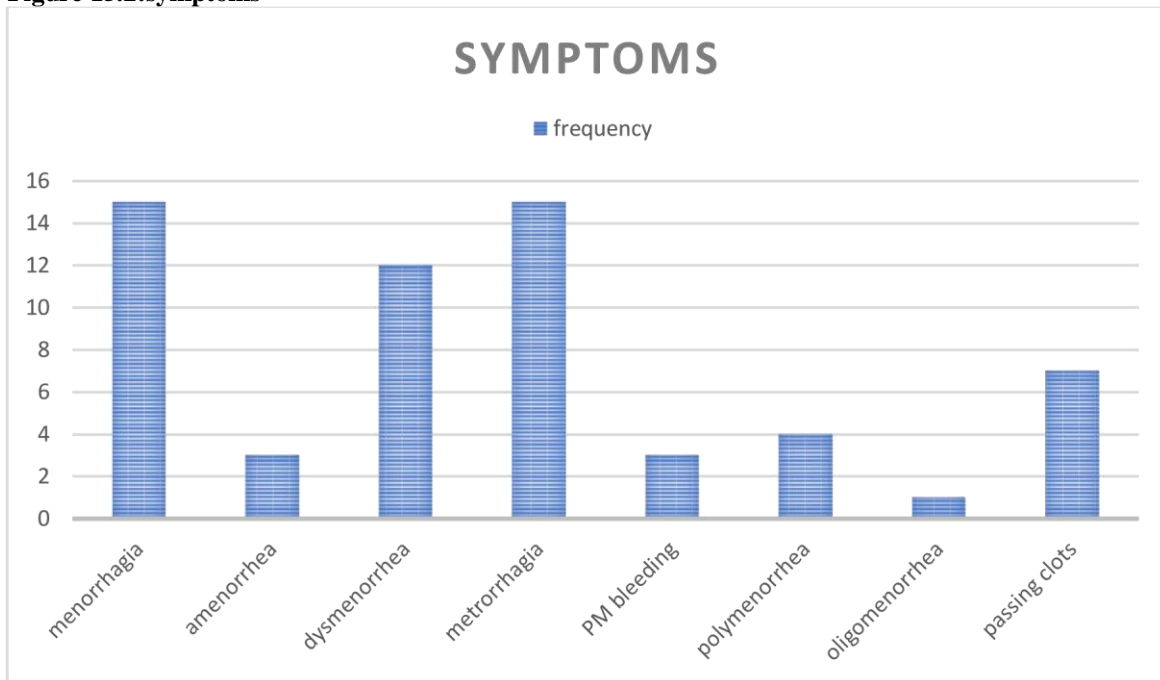
ADENOMYOSIS:

Figure 15.1:treatment



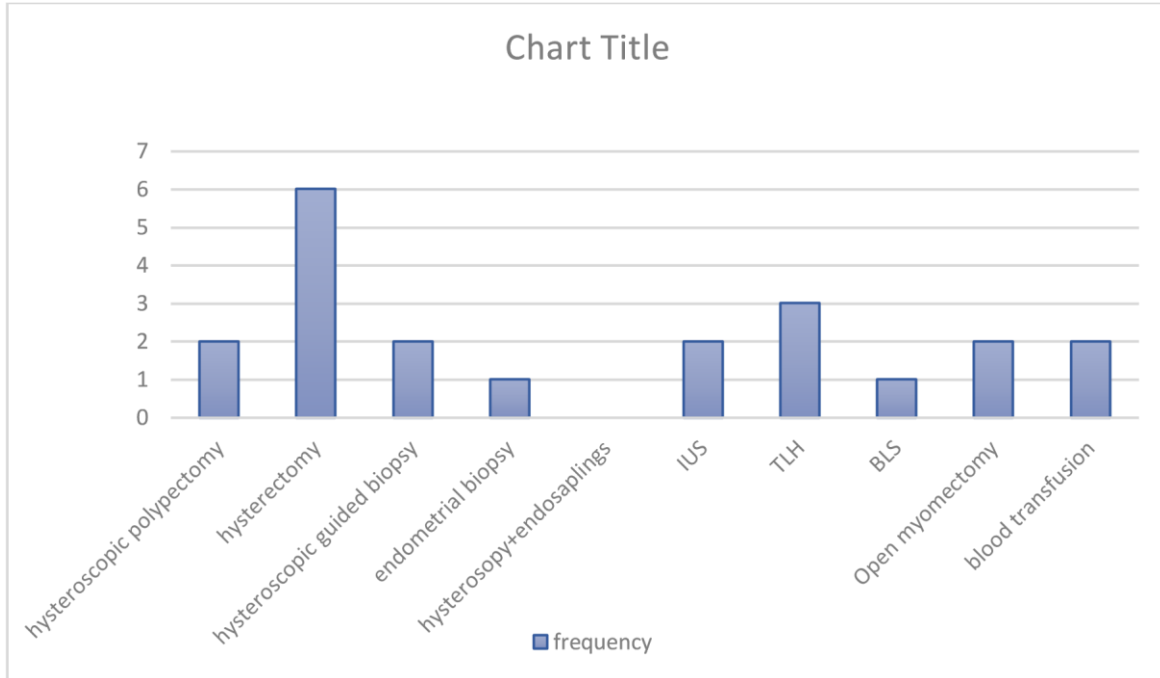
Graph plotted which indicates the treatment given for Adenomyosis to patients included in the study. Most prescribes with Ferrous fumerate+folic acid and mefanamic acid.

Figure 15.2:symptoms



Graph plotted which indicates the main symptoms of Adenomyosis in study population. with menorrhagia, metrorrhagia and dysmenorrhea being the most common symptoms.

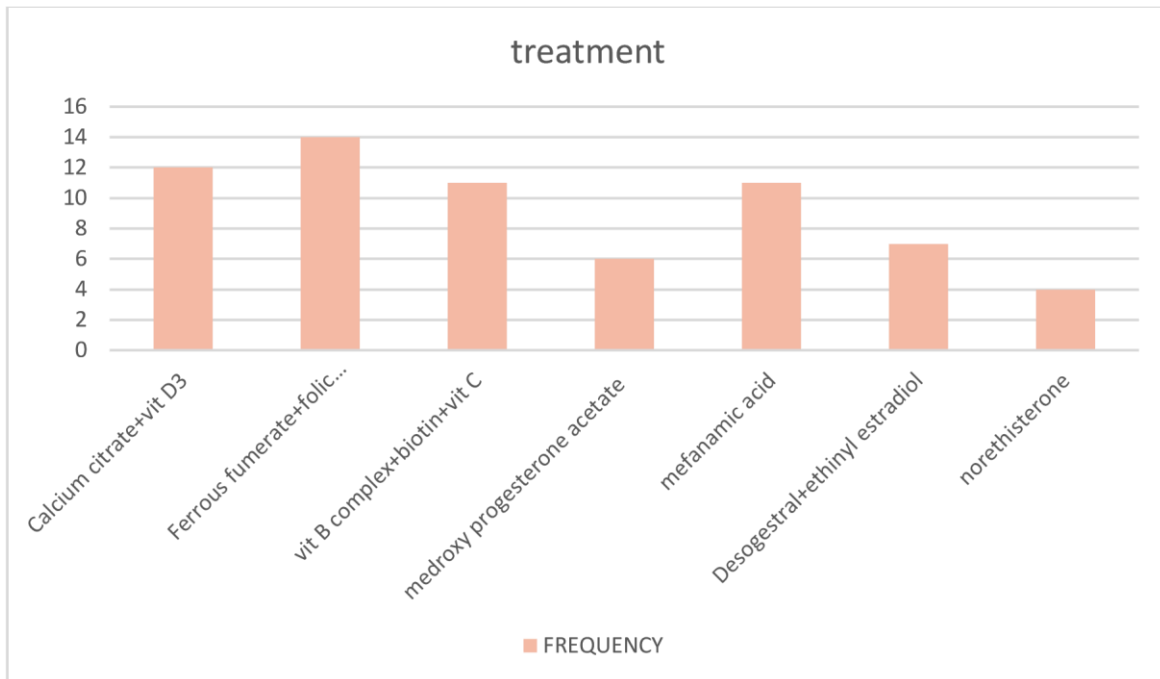
Figure 15.3:surgery



Graph plotted which indicates the surgeries performed for Adenomyosis.

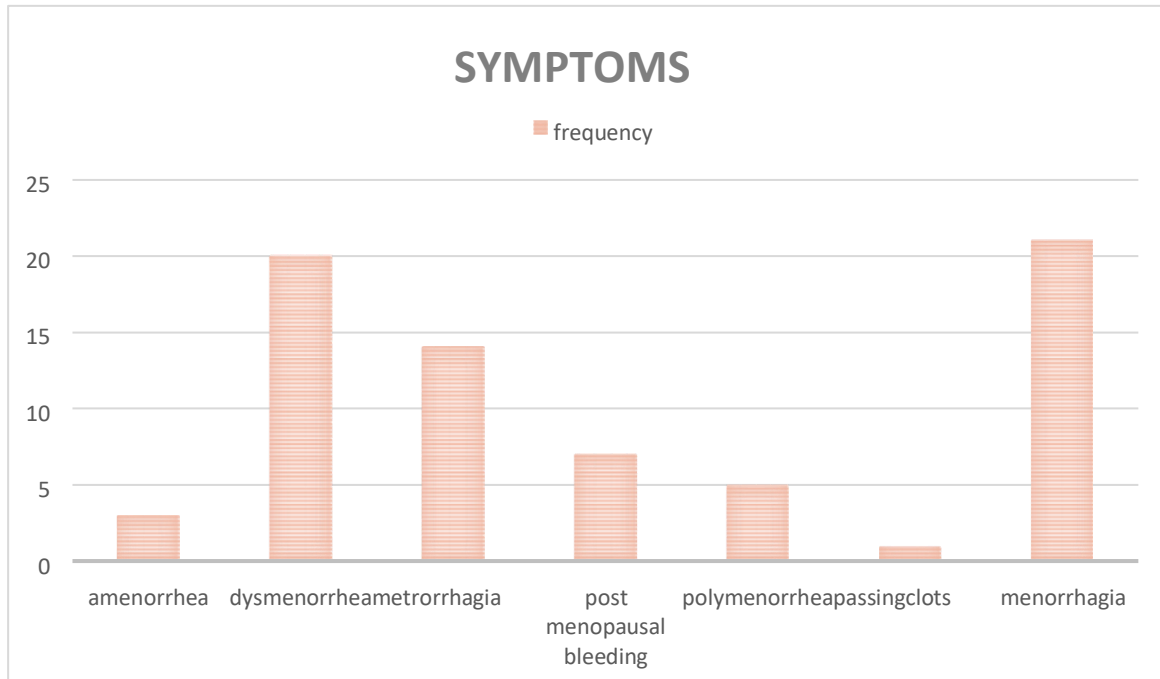
**INTRAMURAL FIBROIDS**

**Figure 16.1: treatment:**



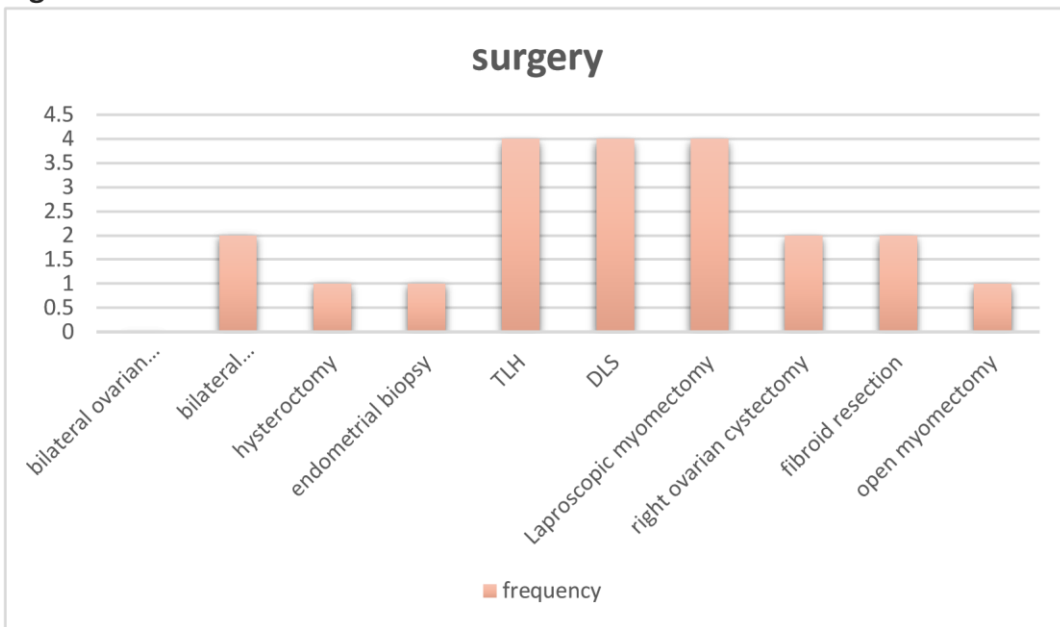
Graph plotted which indicates the treatment given for Intramural fibroids. Most were prescribed with ferrous fumerate+folic acid and mefanamic acid.

**Figure 16.2:symptoms**



Graph plotted which indicates the symptoms of intramural fibroids. Dysmenorrhea is the most common symptom.

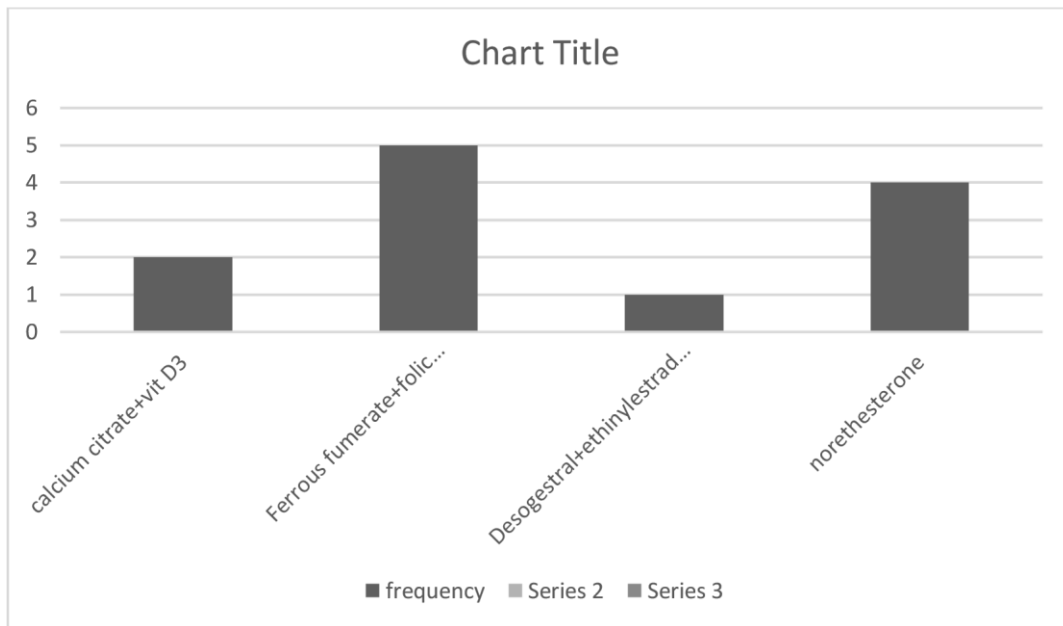
Figure 16.3



Graph plotted which indicates the surgeries done to patients with intramural fibroids.

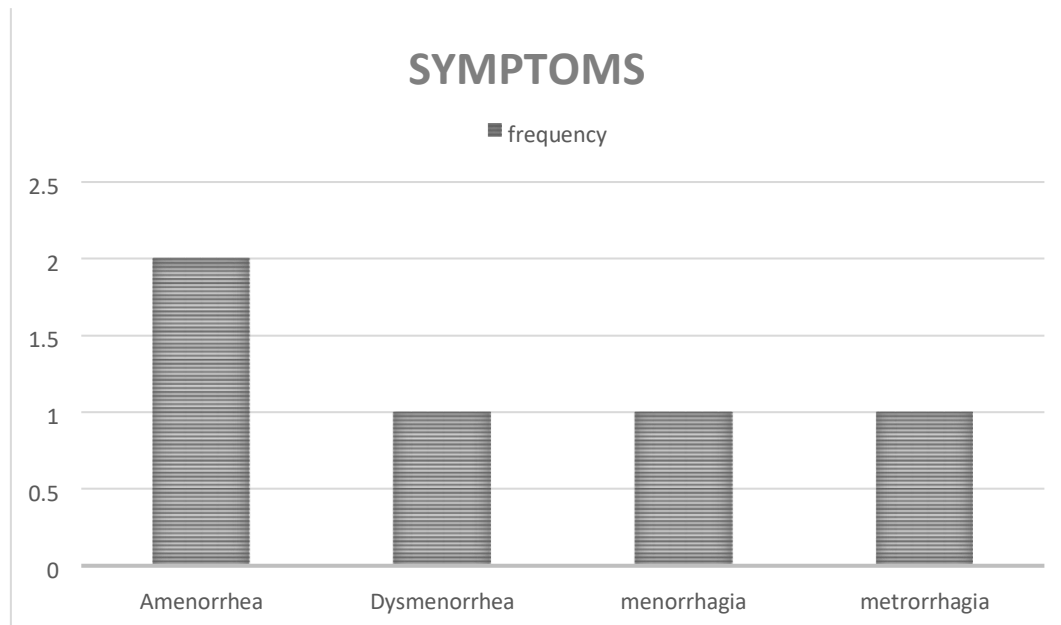
**BULKY UTERUS:**

Figure 17.1: treatment



Graph plotted which indicates the treatment given for bulky uterus in study population.

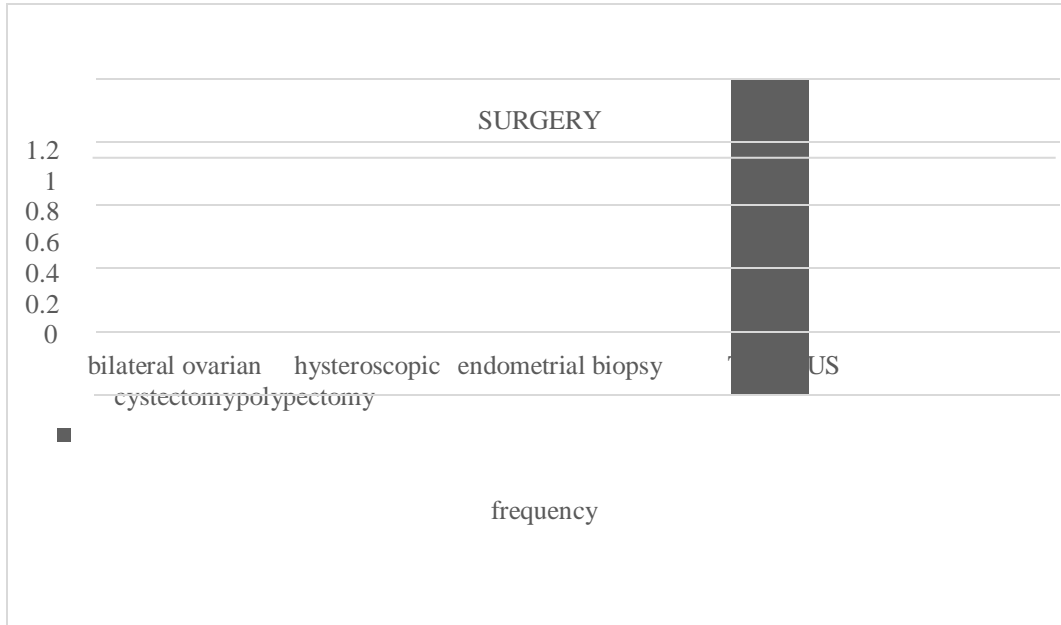
Figure17.2:Symptoms



Graph plotted which indicates the symptoms of Bulky uterus. Amenorrhea is the most common symptom.

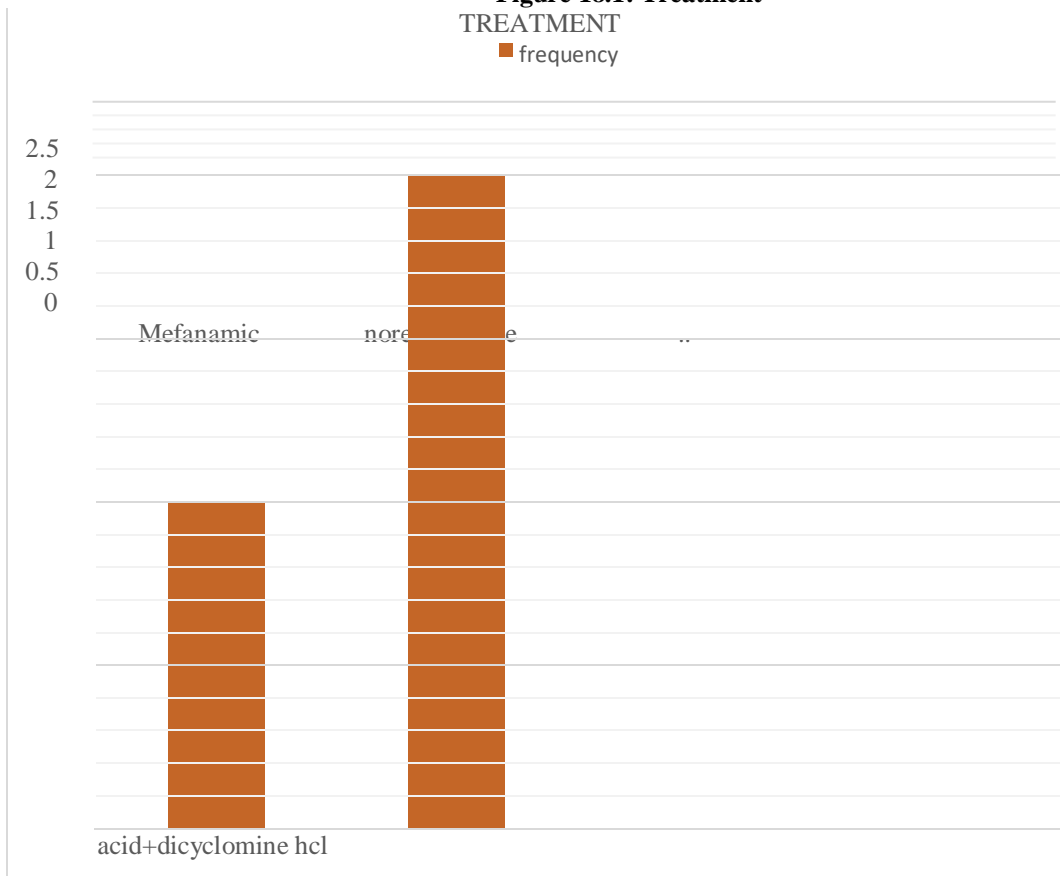
Figure 17.3: Surgery

Graph plotted which indicates the surgical treatment given for bulky uterus in study population. TLH was the only surgery performed.



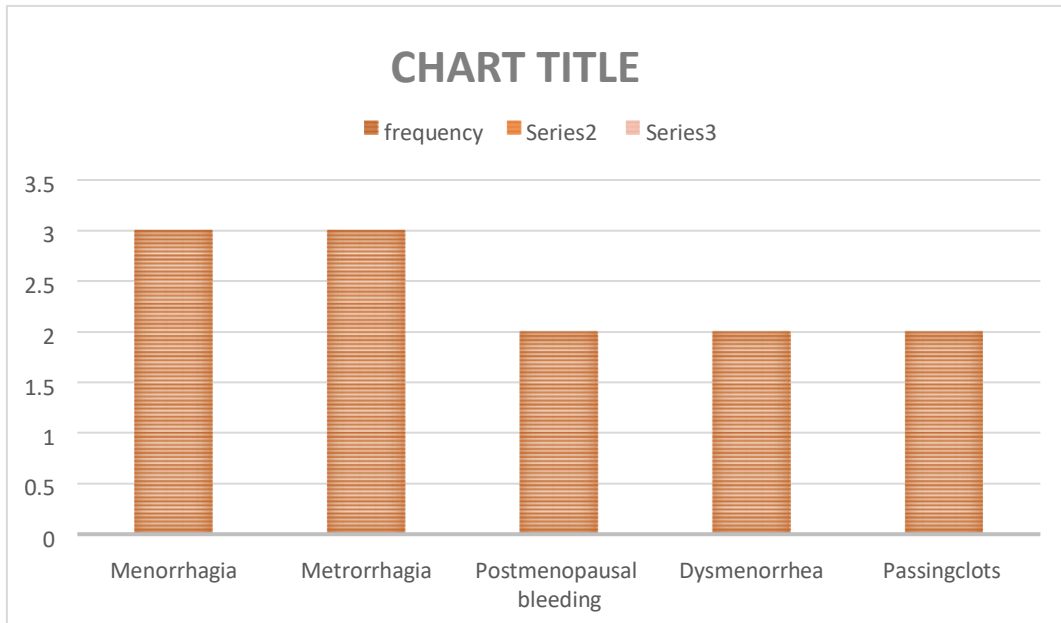
**ENDOMETRIAL HYPERPLASIA:**

**Figure 18.1: Treatment**  
TREATMENT  
■ frequency



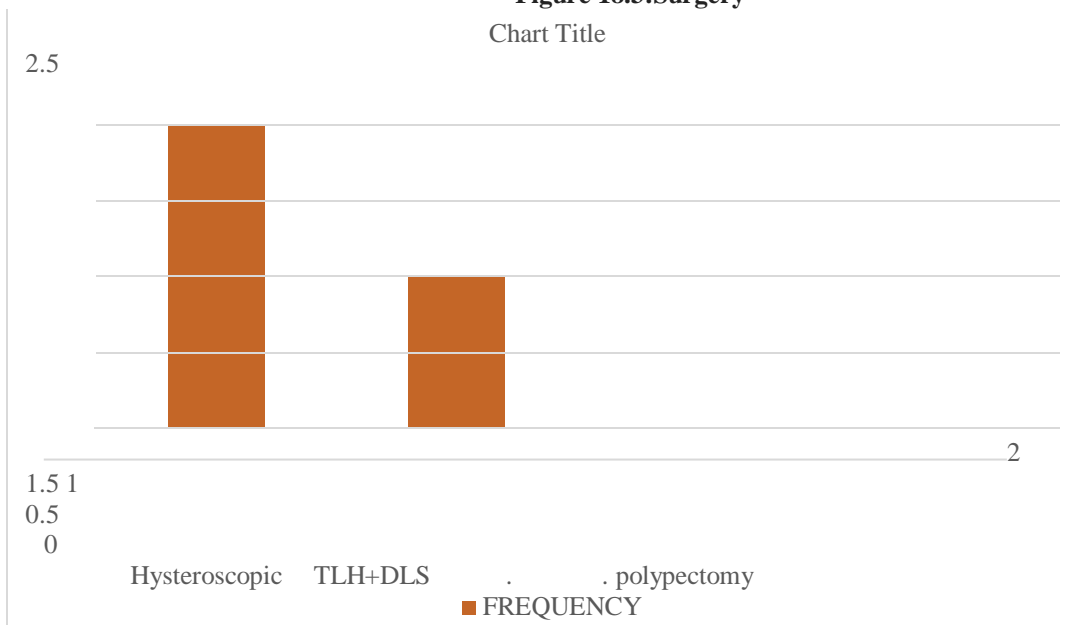
Graph plotted which indicates the treatment given for Endometrial hyperplasia in study population.

Figure18.2:Symptoms



Graph plotted which indicates the symptoms of Endometrial hyperplasia in study population.

Figure 18.3:Surgery

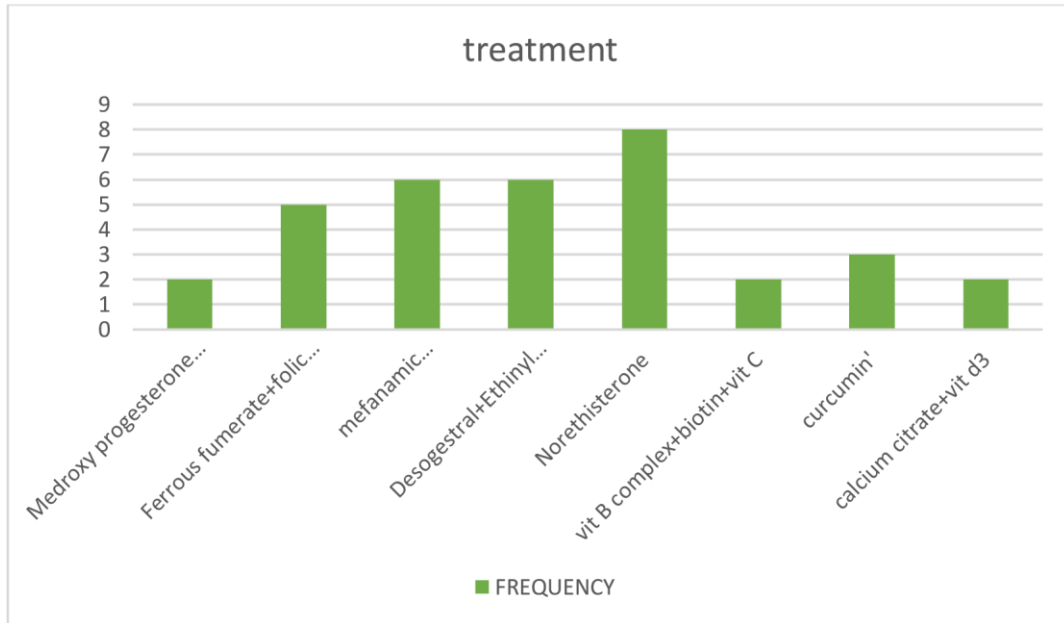


Graph plotted which indicates the surgical treatment given for endometrial hyperplasia in study population.

ENDOMETRIOSIS:



Figure 19.1: Treatment



Graph plotted which indicates the treatment given for Endometriosis in study population.

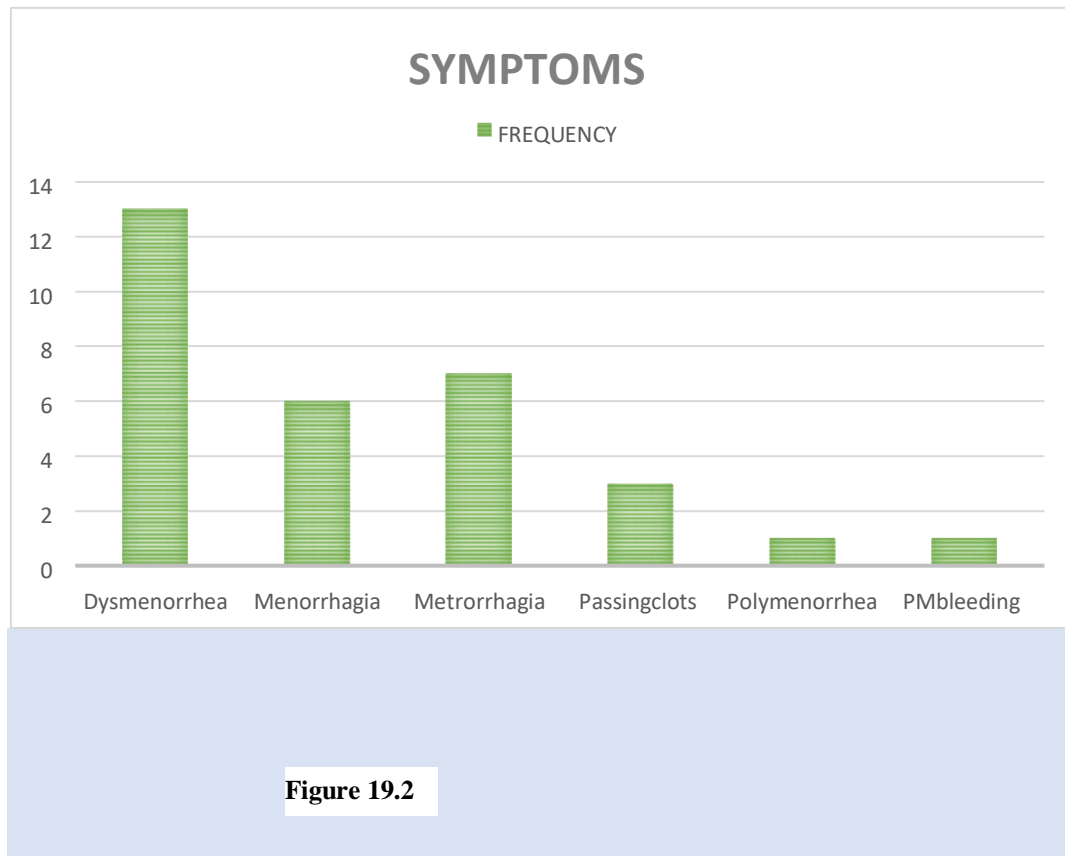
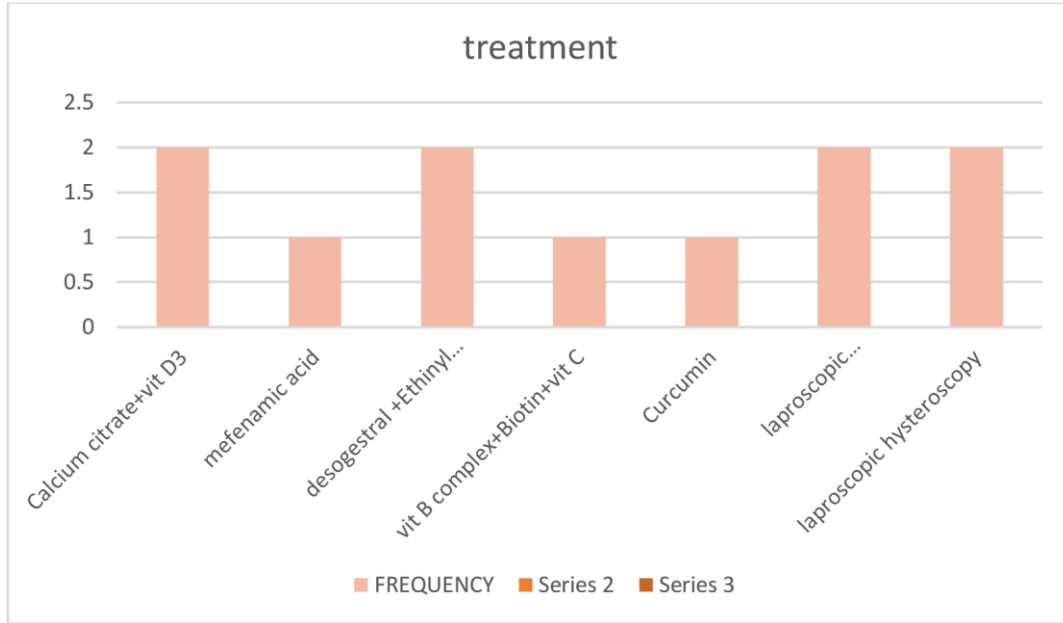


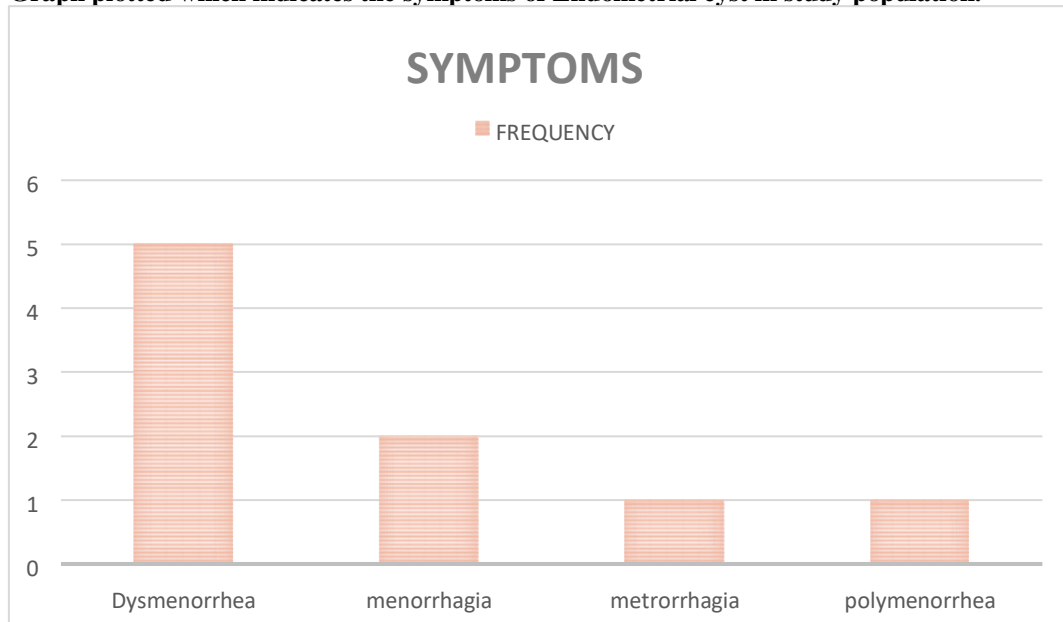
Figure 19.2

**ENDOMETRIAL CYST:**



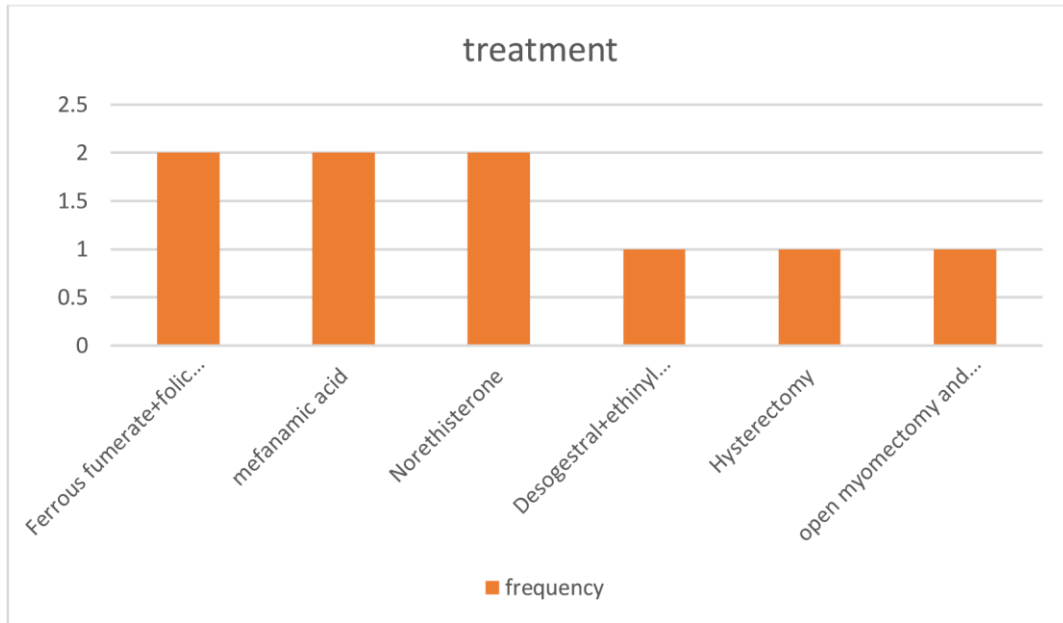
**Figure 20.1: Treatment**  
Graph plotted which indicates the treatment given for Endometrial cyst in study population.

**Figure 20.2:Symptoms**  
Graph plotted which indicates the symptoms of Endometrial cyst in study population.



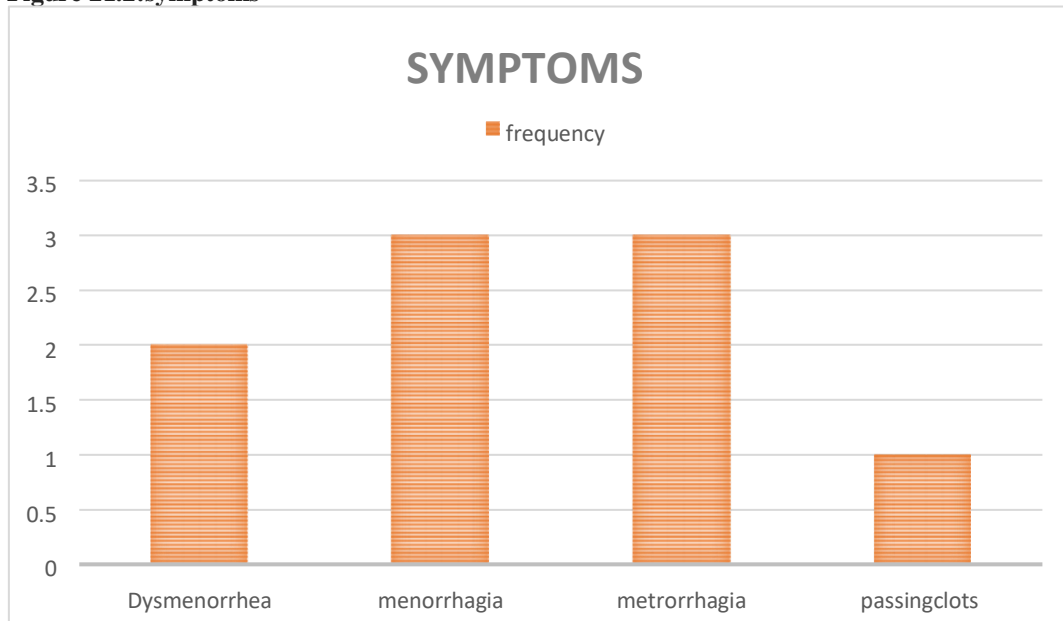
**LEIOMYOMA**

Figure 21.1:Treatment



Graph plotted which indicates the treatment given for leiomyoma in study population.

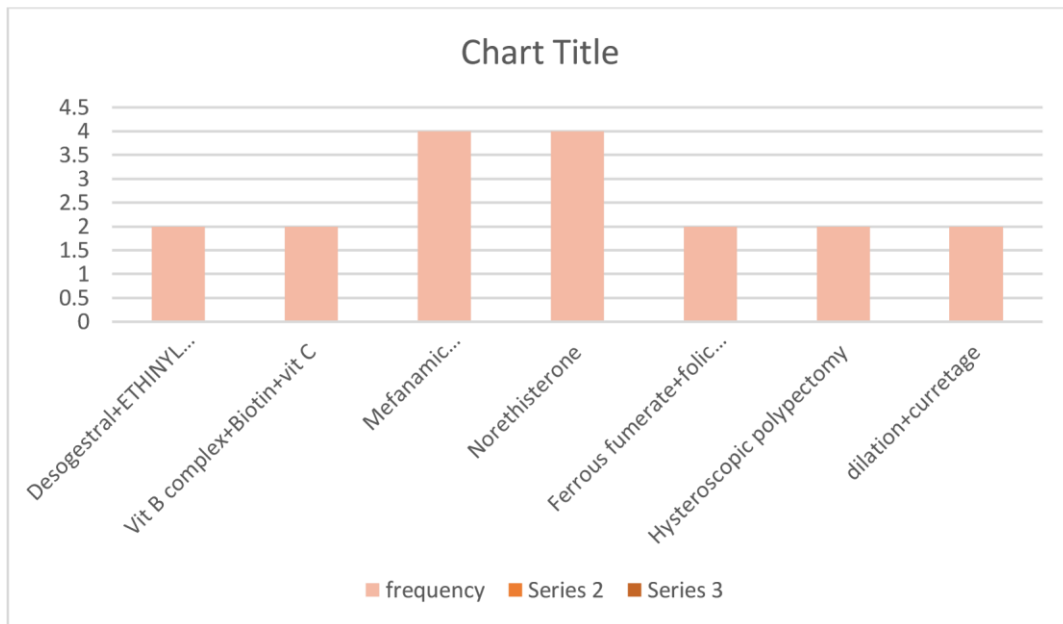
Figure 21.2:symptoms



Graph plotted which indicates the symptoms of leiomyoma in study population.

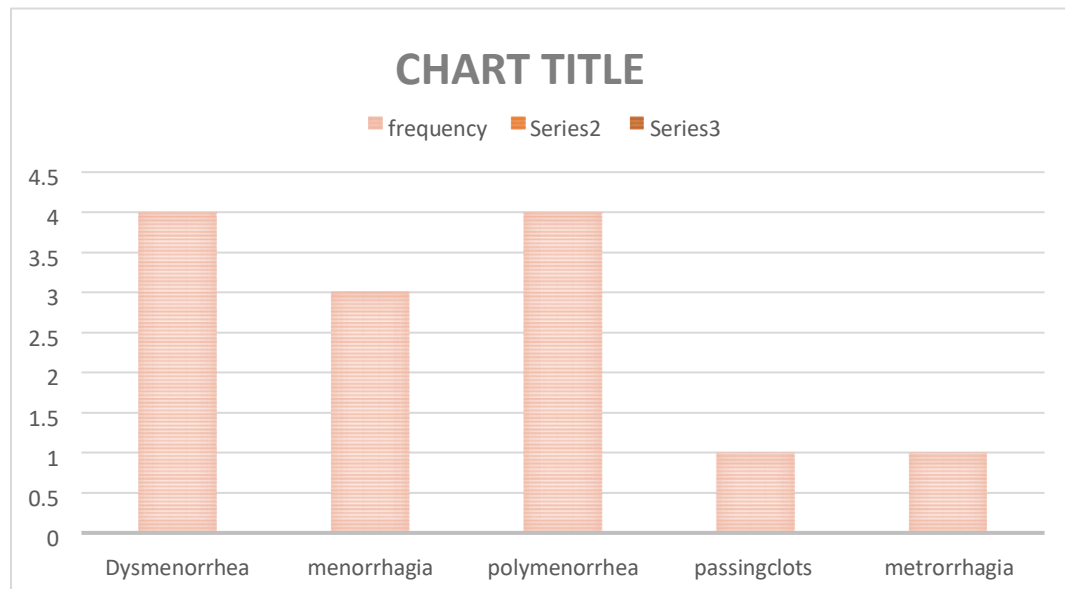
**OVARIAN CYST:**

Figure 22.1:treatment



Graph plotted which indicates the treatment given for ovarian cys

Figure22.2:Symptoms

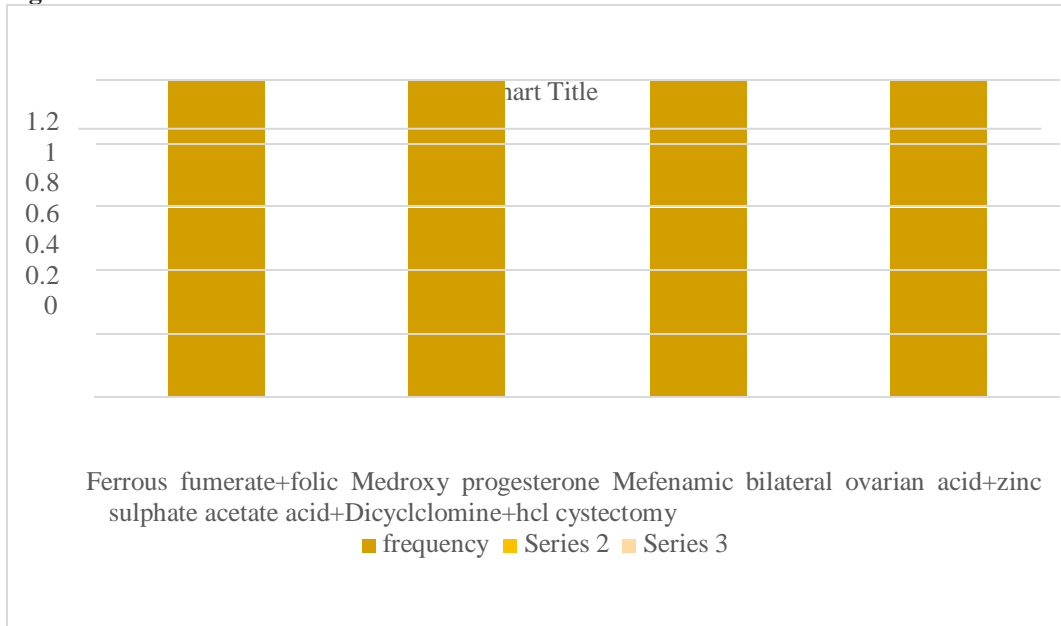


t in study population.

Graph plotted which indicates the symptoms of leiomyoma in study population.

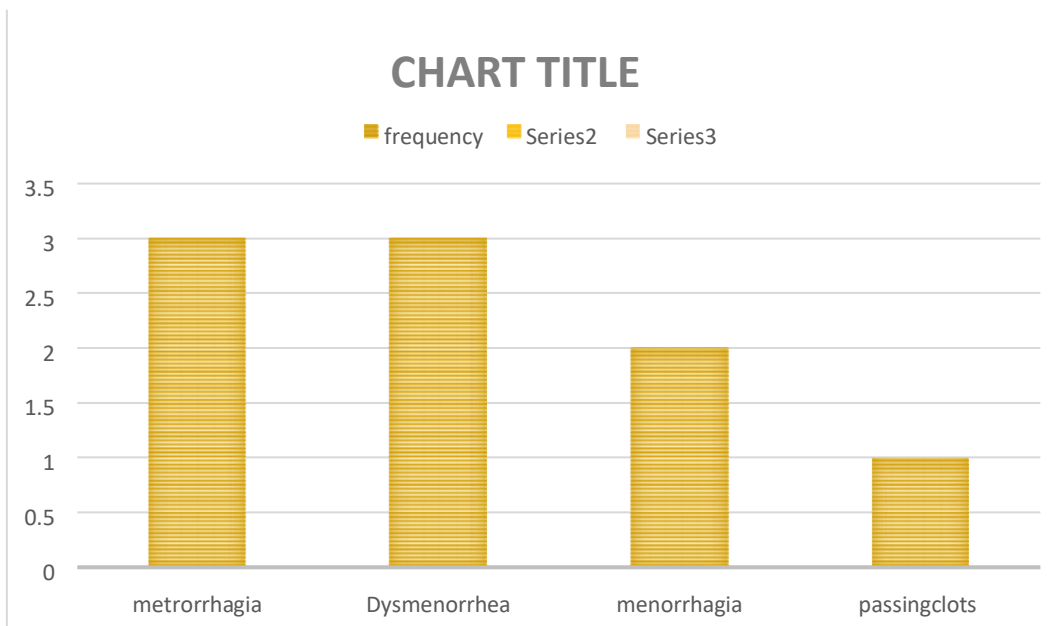
**HAEMORRHAGIC CYST:**

Figure 23.1:treatment



Graph plotted which indicates the treatment given for haemorrhagic cyst in study population.

Figure23.2:Symptoms



Graph plotted which indicates the treatment given for haemorrhagic cyst in study population.

**DISCUSSION:**

In our study, we recruited 150 patients with different menstrual bleeding patterns and USG scan impressions who presented to outpatient department of fehmicare hospital within the age group of 11-70 years of age and the mean age of 39.53±10.02. in a study conducted by con SM, cromwell DA, Mahmood TA et al 2013 showed that 30-35% of women reported menorrhagia. in

our study, menorrhagia showed highest frequency with 53% of all cases next to dysmenorrhea. study conducted by chengyi ding et al, BMC women's health 2019 showed that risk factors for AUB were found to be uterine fibroids and multiple abortions. our study showed that intramural fibroids were recorded in the past medical history of most patients. the commonest age group presenting with AUB in our study is 41-50 years. the incidence of

AUB between 51-70years was lower as compared to those between 41-50 years. a significant number of cases showed adenomyosis recording the highest frequency of 38% of all cases. levy G, dehaene A, Laurent M, et al; 2013 study showed that most cases of adenomyosis occur in multiparous women in the 4th and 5th decade of life. our study showed that most cases of AUB were found in multiparous women where as low frequency was recorded in nulliparous women. out of 150 patients in our study, only 13 patients were nulliparous. Ponti's A, Alterio MN, Piracaba S, de angelis C, tinelli R, angioni C 2016 study showed that LNG-IUS most promising medical therapy considering its low adverse effect profile and efficacy. in our study, among progestins, MPA was the most prescribed one followed by LNG-IUS for treatment of menometrorrhagia. the prevalence of metrorrhagia, oligomenorrhea, polymenorrhagia and amenorrhea in our study was 63(42%), 1(1%), 25(17%) and 9(9%) respectively. cooper NA, barton PM, brijer M, et al for management of AUB showed goals of AUB therapy include decrease in menstrual blood loss, QOL improvement and management of structural abnormality that contributes to AUB. the pharmacological therapy include hormonal and non-hormonal therapies including LNG-IUS in suitable cases. in our study, various factors are taken into consideration that includes patient's desire for fertility, to see if the patient is willing to undergo surgery. if the patient chooses for surgical management, the desire for fertility is taken into consideration. many conservative surgeries like hysteroscopic polypectomy, adenomyomectomy and laparoscopic cystectomy resndersfertility of the patient. total laparoscopic hysterectomy and bilateralsalpingo-oophorectomy should be performed in patients who do not desire fertility. hysterectomy is considered the most definite option ultimately removing the source of pathology. the medical treatment options include: hormonal contraceptives. MPA was most commonly prescribed among progestins. among COC's levonorgestrel+ethinyl estradiol were prescribed in most patients. mefenamic acid was prescribed for treatment of dysmenorrhea which was the most common symptom among the patients included in our study. ferrous fumarate+folic acid +zinc sulphate was the most commonly prescribed nutritional supplement to balance the loss of blood caused due to HMB. nutritional supplements are included in the treatment regimen to potentiate the improvement

in patients alongside CHC's, NSAIDs and antifibrinolytics.

### CONCLUSION:

We conducted a prospective observational study with a sample size of 150 cases that focused on the management of AUB. the study was conducted at fehmicare hospital, Hyderabad during the time period of October 2022 to February 2023. the most common age group of patients was 41-50 years. the most common bleeding pattern in our study was menorrhagia which was recorded in 53% of patients followed by metrorrhagia which is seen in 42% of patients. adenomyosis was reported in 38% of patients followed by intramural fibroids sin 20% of patients. the management in our study included CHC's, mefenamic acid(NSAID's), tranexamic acid(antifibrinolytics). and other nutritional supplements of which most commonly prescribed was ferrous fumarate+folic acid zinc sulphate. among the surgeries, the most commonly performed surgery was TLH taking into consideration the endometrial thickness, frequent visits to hospital with complaints of recurrence, and patient's desire for fertility and failure of medical therapy. the other conservative surgeries performed include hysteroscopic polypectomy, Adenomyomectomy, myomectomy, and laparoscopic cystectomy. the most commonly prescribed hormonal contraceptives were desogestrel+ethinyl estradiol and norethisterone. medroxyprogesterone acetate was given as monotherapy in patients with menorrhagia considering its lower adverse effect profile. thus, by our study we conclude that desogestrel+ethinyl estradiol was most commonly prescribed followed by norethisterone and MPA in hormonal therapy. Nutritional supplements like ferrous fumarate+folic acid+zinc sulphate, calcium citrate+vitamin D3 and vitamin B complex+biotin+vitamin C was given to combat the effects of blood loss caused by HMB and to treat the national deficiencies leading to AUB. TXA is considered the most effective resulting in the reduction of blood loss to about 50%. mefenamic acid is given in patients complaining of dysmenorrhea which is a common symptom in AUB. surgery is based on certain factors. but to avoid recurrence, TLH is considered the definite option.

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