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RESEARCH ARTICLE

CLINICO-HISTOPATHOLOGICAL STUDY OF ENDOMETRIUM WITH AND WITHOUT HORMONE THERAPY IN PATIENTS WITHABNORMAL UTERINE BLEEDING

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Abstract

Background: Abnormal uterine bleeding (AUB) is one of the most common problem for the patients and the gynecologists. Histological characteristics of endometrial biopsy material as assessed by light microscopy remains the diagnostic standard for the diagnosis of endometrial pathology.

Material and Methods: In our prospective study of 100 patients of the age between 24-75 years, clinical characteristics and the pattern of endometrial histopathology and their association with hormone therapy administration were studied.

Results: Total of 100 patients were divided into two subgroups one that received hormone therapy prior to endometrial biopsy and Group II in which hormone therapy was not administered prior to the said procedure. In both groups proliferative phase was the commonest followed by secretory endometrium in both groups. Pill change, Arias Stella reaction, tubercular endometritis, endometrial carcinoma was exclusively noted in the group in hormone therapy was administered prior to endometrial biopsy. Pill change endometrium was only significantly correlated with Group I (p=0.05). Simple hyperplasia, endometrial polyp, chronic endometritis, endocervical polyp, atrophic endometrium was noted in Group II of which simple hyperplasia (p=0.10) was not found to be clinically significant.

Conclusions: The study of the endometrium in AUB revealed many structural and non-structural causes manifest in the form of different endometrial histopathological patterns in two groups with or without hormone therapy. Endometrial study gives significant etiological information in AUB when interpreted with relevance to age and other clinical data, thus guiding the appropriate management.

Introduction:-

Abnormal uterine bleeding (AUB) is the commonest presenting symptom in gynecologyoutpatient department. Endometrial sampling is the confirmatory step in the diagnosis AUB, although at times, its interpretation could be quite challenging to the practicing pathologists. [1]

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The present study was undertaken to find out the different endometrial pathologies in the two subsets of cases with AUB; one who were administered hormone therapy prior to biopsy and the other group who did not receive hormone therapy prior to endometrial biopsy. [2]
This study was done to identify various causes of AUB in the two groups described as above.

Materials and Methods:-

This prospective study was conducted in the Department of Pathology in collaboration with the Department of Obstetrics & Gynaecology, School of Medical Sciences and Research, Sharda Hospital, Greater Noida, for two years (May 2019-April 2021).

Cases: n=100

Inclusion Criteria:
All patients who visited the Department of Obstetrics and Gynaecology Department with complaints of AUB with or without history of hormone therapy.

Exclusion Criteria:
a) Patients with deranged coagulation profile (INR ;1.5)
b) Severe thrombocytopenia (platelet count <50,000/µL)
c) Patients with history of any other hormonal therapy intake (OCPs, tamoxifen etc)
d) Uncooperative patients
e) Patients with cervical pathology
f) Patients with vaginal pathology
g) Pregnancy
h) Lactation
i) Genital Malignancy

One hundred patients with AUB were enrolled for the study. Complete clinical details along with treatment history were noted in each case. Routine investigations were carried out; mainly the CBC, hormones (serum progesterone), coagulation profile and platelet count to exclude any bleeding diathesis.

Informed consent was taken from each patient. Endometrial Biopsy was done under aseptic conditions. Biopsies were transported in 10% formalin to the histopathology section. Hematoxylin and eosin sections were prepared and evaluated. Data collected for the study was statistically analyzed using χ^2 test.

Results:-

The age of the patients ranged from24-75 years (42.5±8.9years). Out of 100 cases the maximum number of cases were in perimenopausal age group (n=50, 50%) followed by reproductive group (n=38, 38%). The minimum number of patients were in the postmenopausal group (n=12, 12%).

Seventy-two patients had received hormonal therapy prior to endometrial biopsy while in 28 cases had not received hormonal therapy. (**Table No. 1)**

Table No. 1:- Distribution of cases (n=100) according to administration of hormone therapy.

Age Groups (years)	Hormone therapy administered	Hormone therapy Not administered
Reproductive	16	23
Perimenopausal	45	05
Postmenopausal	11	01
Total	**72**	**28**

The most common complaint among the patients was heavy menstrual bleeding (n=35, 35%), followed by frequent cycles (n=20, 20%). Intermenstrual bleeding in (n=19, 19%) of the cases and heavy and prolonged bleeding constituted (n=14, 14%)of the cases. Postmenopausal bleeding was seen in 12% of patients.

Table No. 2:- Distribution of different histological patterns (structural and non-structural) in endometrial biopsy in AUB patients (n=100).

S.No	Causes	Pattern	Premenopausal 18-40years	Perimenopausal 41-50 years	Postmenopausal > 50 years	Total	%	Total
1.	Structural Causes	Simple Hyperplasia	3(7.9%)	0	0	3	18.75	16
2.		Complex Hyperplasia	1(2.6%)	1(2%)	0	2	12.5	
3.		Endometrial Polyp	2(5.2%)	0	0	2	12.5	
4.		Chronic Endometritis	1(2.6%)	1(2%)	0	2	12.5	
5.		Endocervical Polyp	1(2.6%)	0	0	1	6.2	
6.		Arias Stellas Reaction	2(5.2%)	0	0	2	12.5	
7.		Tubercular Endometritis	2(5.2%)	0	0	2	12.5	
8.		Endometrial Carcinoma	0	1(2%)	1(8.3%)	2	12.5	
9.	Non-Structural Causes	Proliferative Phase	19(50%)	21(42%)	4(33.3%)	44	52.3	84
10.		Secretory Phase	4(10.5%)	20(40%)	4(33.3%)	28	33.3	
11.		Disordered Proliferative Phase	1(2.6%)	3(6%)	1(8.3%)	5	5.9	
12.		Atrophic Endometrium	0	0	2(16.7%)	2	2.3	
13.		Pill change	2(5.2%)	3(6%)	0	5	5.9	
	Total		**38(100%)**	**50(100%)**	**12(100%)**	**100**	**100**	**100**

Out of 100 cases, 38 cases were in the premenopausal group 18-40 years. In this group, the maximum number of cases (n=19, 50%) showed proliferative endometrium, followed by secretory endometrium in 4 cases (10.5%). There was one case (2.6%) each of complex hyperplasia without atypia, disordered proliferative endometrium, chronic endometritis and endocervicalpolyp. All 3 cases (7.9%) of simple hyperplasia in our study population were in premenopausal group.

Among perimenopausal group, maximum number (n=21, 42%) were of proliferative endometrium followed by secretory endometrium (n=20, 40%). Three cases each were of disordered proliferative endometrium and of pill change endometrium respectively. One case of endometrial carcinoma was noted in 45 years old female.

In postmenopausal age group (>50 years), out of 12 cases; 4 cases (33.3%) each were of proliferative and secretory endometrium. Atrophic Endometrium was noted in 2 cases (n=2, 16.7%). There was one case (8.3%) of disordered proliferative endometrium. A 75year female was diagnosed of endometrial carcinoma on histopathology in this group. **(Table No. 2)**

Table No. 3:- Distribution of different histological patterns (structural and non-structural) according to administration of hormone therapy (n=100).

S. No	Causes	Pattern	Hormone therapy administered Group I	Hormone therapy Not administered Group II	Total	%	Total
1.		Simple Hyperplasia	0	3	3	18.75	

2.	Structural Causes	Complex Hyperplasia	1	1	2	12.5	16
3.		Endometrial Polyp	0	2	2	12.5	
4.		Chronic Endometritis	0	2	2	12.5	
5.		Endocervical Polyp	0	1	1	6.2	
6.		Arias stellas Reaction	2	0	2	12.5	
7.		Tubercular Endometritis	2	0	2	12.5	
8.		Endometrial Carcinoma	2	0	2	12.5	
9.	Non-Structural Causes	Proliferative Phase	32	12	44	52.3	84
10.		Secretory Phase	22	6	28	33.3	
11.		Disordered Proliferative Phase	5	0	5	5.9	
12.		Atrophic Endometrium	1	1	2	2.3	
13.		Pill change	5	0	5	5.9	
	Total		**72**	**28**	**100**	**100**	**100**

Total patients were divided into two subgroups one that received hormone therapy prior to endometrial biopsy and Group II in which hormone therapy was not administered prior to the said procedure. In both groups proliferative phase was the commonest histopathological diagnosis with 32 out of 68 cases in Group 1 and 12 out of 32 cases in Group II. This was followed by secretory endometrium in both groups. Pill change, Arias Stella reaction, tubercular endometritis, endometrial carcinoma was exclusively noted in the group in hormone therapy was administered prior to endometrial biopsy. However, only pill change endometrium was significantly correlated with Group I($p=0.05$) which was clinically significant. Simple hyperplasia, endometrial polyp, chronic endometritis, endocervical polyp, atrophic endometrium was noted in Group II of which simple hyperplasia was significantly related to this group ($p=0.10$) which was not found to be clinically significant **(Table No. 3)**

Discussion:-

The present study was carried out in the Department of Pathology in collaboration with Department of Obstetrics and Gynecology in School of Medical Sciences &Research from June 2019 to December 2021.

A total of 100 cases were included in the study. The age of the patients ranged from 24-75 years (42.5± 8.9 years).

The highest incidence of AUB in our study was in theperimenopausal age group (50%) followed by the reproductive age group (38%). The studies Soleymani E et al,[3] Sajitha K et al,[4] Agrawal Set al,[5] Kunda J et al,[6] Chapagain SA et al,[7] Salvi et al [8] also reported perimenopausal to be the commonest group.

The most common presenting complaint in the present study is heavy menstrual bleeding (35%) followed by frequent cycles (20%) and intermenstrual bleeding (14%). This finding was in concordance with the studies like Khan S et al, [9] Sajitha K et al,[4] Agrawal S et al [5] Kunda J et al [6]in which heavy menstrual bleeding was the commonest complaint. Intermenstrual bleeding is the commonest complaint in studies like Bhatta S et al [10] Shukla S et al, [11] MoghalN et al. [12]

In our study nonstructural causes were more common in the both groups with or without hormone therapy administered prior to endometrial biopsy. Among the non-structural causes cyclical pattern was commonest i.e. proliferative endometrium followed by secretory endometrium. These findings were consistent with independent studies bySandeepaS et al, [13] SaraswathiD et al, [14] Kunda J et al [6]. Highest incidence of cyclical patterns with proliferative endometrium was observed in Khan S et al, [9] Soleymani E et al, [3] Nirmala et al [15] Abdullah Layla S et al [16] Afghan et al. [17] However, secretory pattern was common in studies like Jetley S et al [18]

In our study 5% cases in Group I (hormone therapy administered prior to endometrial biopsy) were of DUB. Maximum incidence DUB was in the study bySaraswathi D et al, [14] (20.53%). Soleymani E et al, [3] reported that DUBaccounted for 15.3% cases in their study.

Hyperplasia constitutes 4% of cases of AUB in our study, simple hyperplasia (3%) and complex hyperplasia without atypia 1% was present in 1% of cases. A similar incidence of hyperplasia is found in studies like Sarwat Ara et al, [19] Adnan GN et al [20] Dadhania B et al. [21]

In postmenopausal group atrophic endometrium and endometrial carcinoma was reported common in Group II in which hormone therapy of was not given prior to biopsy while one case each of complex hyperplasia was reported in each of the two groups.

Conclusion:-

Endometrium is the mirror of hormonal status in the women. In patients of AUB, endometrial biopsy plays a pivotal role in diagnosis and management. The histological variations are observed in the endometrium according to the age of woman, phase of her menstrual bleeding and specific pathology.

Cyclical change is the commonest histopathological pattern noted in the Cohort. Pill endometrium and Disordered Proliferative endometrium are almost exclusively noted in the patients who were administered Hormone therapy prior to the procedure. It is important to know the histological pattern of the endometrium like proliferative endometrium, endometrial hyperplasia, atrophic endometrium, secretory endometrium, irregular ripening and shredding and organic lesions in patients diagnosed as AUB in different age groups since recognition of these conditions will help and will avoid further complications.

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