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MEASUREMENT OF SERUM PROLACTIN LEVEL IN WOMEN WITH ABNORMAL UTERINE BLEEDING

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) encompasses deviations from the typical menstrual cycle, and it was prevalent among women of all ages. Prevalent among reproductive-aged women. It varies widely in incidence and presentation. AUB has diverse etiologies, including organic and non-organic causes. Hormonal disturbance is one of the causes of its non-organic causes. **Objectives of the study:** This study aims to determine the level of serum prolactin in women with abnormal uterine bleeding. **Patients & Method:** A prospective case series study that recruited (100) women with AUB who were admitted to the obstetrics and gynecology department at Duhok maternity and childhood teaching hospital and Al Khansaa teaching hospital, Mosul, Iraq, from 7th January 2023 to 1st December 2023. **Results**: Most of the patients with AUB were premenopausal. Menorrhagia was the commonest pattern among premenopausal patients. Hyperprolactinemia was diagnosed in 35% and 40% of patients with a significant statistical difference 0.001 in both postmenopausal and premenopausal patients, respectively. Hyperprolactinemia was associated with metrorrhagia in 50% of premenopausal patients. There was no statistical relationship between histopathological results and serum prolactin in premenopausal and postmenopausal patients. There is a significant weak positive correlation between prolactin level and duration of AUB. **Conclusions:** Hyperprolactinemia was diagnosed in patients with AUB with non-organic causes in premenopausal and postmenopausal patients, so serum prolactin should be one of the workup investigations in patients with abnormal uterine bleeding.

KEYWORDS: Abnormal uterine bleeding; serum prolactin; menstrual irregularity; normal prolactin level; hyperprolactinemia.

1. INTRODUCTION

Abnormal uterine bleeding is a deviation from the normal menstrual cycle that affects women of reproductive age. Its prevalence is estimated to lie between 3% and 30% of women worldwide, with higher incidences around menarche and perimenopause.[1,2] Abnormal bleeding may arise from physiological processes or from malignant tumors. Anovulatory cycles produce oestrogen but do not form a corpus luteum, so that progesterone secretion is absent and unopposed endometrial proliferation follows, whereas ovulatory cycles are characterised by prolonged progesterone secretion and irregular shedding of the endometrium. The causes may be classified as structural or non-structural according to the PALM-COEIN classification system.[1, 3]

1.1 Physiology of prolactin

Prolactin (PRL) is a polypeptide hormone synthesized and secreted by the lactotrophs of the anterior pituitary gland and is responsible for lactation, breast development, and other actions required to maintain homeostasis. It is composed of 199 amino acids and has a chemical structure similar to that of growth hormone and placental lactogen. Prolactin secretion is inhibited by hypothalamic dopamine acting on dopamine D2

receptors (D2Rs), and also by endothelin-1, transforming growth factor-β1 and calcitonin. The physiological stimuli of prolactin release include suckling, stress and increased levels of ovarian steroids, primarily oestrogens.[4]

1.2 Hyperprolactinemia and its causes

Hyperprolactinemia is a condition of elevated prolactin levels in blood and falls into three major categories: physiological, pathological, and iatrogenic. Physiological causes include rapid eye movement sleep, physical activity, a high-protein diet, hypoglycemia, sexual intercourse, stress, and the stimulation of pregnancy. Pathological causes may be divided into tumors and systemic diseases such as chronic renal failure.[5]

Iatrogenic hyperprolactinemia may be induced by a variety of medications, such as dopaminergic receptor antagonists, antidepressants, antihypertensive drugs, opiates, antipsychotics, oral contraceptives, antiepileptics, and gonadotropin-releasing hormone (GnRH) agonists. Hyperprolactinemia inhibits GnRH secretion and thereby leads to hypogonadotropic hypogonadism and anovulatory infertility.[6, 7]

1.3 Prolactin and the reproductive tract

In several types of cancer, prolactin may play a causal role through local production or accumulation. In rodents, hyperprolactinemia correlates with increased mammary tumorigenesis, and the administration of prolactin has been shown to promote tumor growth. In gynaecological cancers, the interaction between prolactin and the prolactin receptor (PRLR) promotes protumoral events such as migration, invasion, metastasis, chemoresistance, and the inhibition of apoptosis.[8, 9]

1.4 AIM OF THE STUDY

This study aims to determine the level of serum prolactin in women with abnormal uterine bleeding.

2. PATIENTS AND METHODS

2.1 Study design and setting

This is a prospective case series study that recruited 100 women consecutively attending the departments of obstetrics and gynaecology of Duhok, Al-Khansaa, and Al-Batol teaching hospitals, Iraq, between 7th January and 30th September 2023. All the recruited patients had been admitted for surgical intervention for their abnormal uterine bleeding.

2.2 Sampling process and sample size

A sample of 100 patients fulfilling the inclusion criteria and attending the gynaecology ward for abnormal uterine bleeding was included in the study. Ninety patients (90) underwent diagnostic curettage, and ten (10) underwent total abdominal hysterectomy and/or bilateral salpingo-oophorectomy. After the histopathology had been obtained, the sample of one hundred patients was divided into premenopausal and postmenopausal benign subgroups.

2.3 Inclusion and exclusion criteria

- Patient with abnormal uterine bleeding.
- Age above 35 years.
- The patient accepts undergoing the research.

2.4 Ethical and official approval

All patients were verbally informed about the study, and written consent was obtained; permission was sought from each woman for her participation. Data were used exclusively for the purpose of this study.

2.5 History and clinical examination

A thorough history was taken from the woman after taking written and verbal consent to participate in the research; a questionnaire form was used to facilitate history taking by asking her directly, followed by thorough examination done at the same time. Social and demographic factors were recorded, which include age, occupation, smoking status, and educational level, being considered in this study. Past medical and surgical history and drug history were collected. Previous use of contraception or previous history of HRT was collected, and pregnancy and abortion were calculated for each participant.

Thorough examination was done for each patient, which included a general examination, a chest including breast examination, and a pelvic examination. The ultrasound examination has been carried out to look for endometrial thickness, echogenicity of the endometrium, regularity of the outline, any mass, or any other abnormal feature. Also CBC and blood sample and serum prolactin measurement. Blood samples for the measurement of prolactin levels were drawn in all patients before any surgical intervention to measure S.prolactin. For optimum performance of the assay, follow the directions given in this document for the analyzer concerned. Refer to the appropriate operator's manual for analyzer-specific assay instructions. Resuspension of the microparticles takes place automatically prior to use. Read in the test-specific parameters via the reagent barcode. If in exceptional cases the barcode cannot be read, enter the 15-digit sequence of numbers (except for the Cobas E602 analyzer). Bring the cooled reagents to approximately 20°C and place them on the reagent disk (20°C) of the analyzer. Avoid foam formation. The system automatically regulates the temperature of the reagents and the opening/closing of the bottles.

2.6 Measurement of serum prolactin

Blood samples for the measurement of prolactin were drawn from all patients before any surgical intervention. The assay was performed on an automated analyzer according to the manufacturer's directions for the analyzer concerned, and the analyzer-specific assay instructions of the relevant operator's manual were followed for optimum performance. Resuspension of the

microparticles took place automatically prior to use, and the test-specific parameters were read in via the reagent barcode; where the barcode could not be read, the 15-digit sequence of numbers was entered manually. The cooled reagents were brought to approximately 20°C and placed on the reagent disk (20°C) of the analyzer while avoiding foam formation; the system automatically regulated the temperature of the reagents and the opening and closing of the bottles. A serum prolactin concentration of 4.00–24.99 ng/ml was regarded as normal, and a value of 25.00 ng/ml or above was defined as hyperprolactinemia.

2.7 Surgical intervention and histopathology

Patients underwent either diagnostic dilatation and curettage or laparotomy for hysterectomy and/or bilateral salpingo-oophorectomy. Laparotomy was performed under general or spinal anesthesia after fitness assessment by an anesthesiologist at the respective hospital. Specimens were sent for histopathological study, and the results were followed up for all patients.

3. Statistical Analysis

Data introduction, coding, and tabulation were performed with Microsoft Excel 2010. Descriptive and analytic statistics were performed using the Minitab version 20 statistical program. Descriptive statistics included the mean ± standard deviation (SD) for measurable variables and frequencies and percentages for categorical variables. The independent t-test of two means was used for comparison between quantitative parameters, whereas the chi-square test was used for comparison between categorical variables. One-way analysis of variance (ANOVA) was applied for comparison of means across more than two categories. Pearson's correlation coefficient (r) was estimated between the different parameters in each group by simple linear correlation. P-values ≤ 0.05 were considered statistically significant.

4. RESULTS

A total of one hundred (100) women presenting with abnormal uterine bleeding were enrolled in the study. The age of the sampled women ranged from 38.0 to 61.0 years, with a mean age of 45.8 ± 5.17 years. Ninety-five women (95.0%) were married, two (2.0%) were divorced and three (3.0%) were widowed, the mean duration of marriage being 22.8 ± 5.14 years. With regard to educational attainment, thirty-two women (32.0%) were illiterate, and almost half of the sample (45.0%) had completed primary school only, while eleven (11.0%) and twelve (12.0%) had secondary and university or higher education, respectively. The great majority of the participants were housewives (89.0%), and the remainder were employed (11.0%). Ninety women (90.0%) were non-smokers, seventy-nine of whom were passive smokers, whereas ten (10.0%) were current smokers. The socio-demographic characteristics of the study sample are summarized in Table 1.

The distribution of the study sample according to menstrual status is presented in Figure 1. Eighty women (80%) were premenopausal, and twenty women (20%) were postmenopausal, so abnormal uterine bleeding was four times more frequent among premenopausal than among postmenopausal women in this series.

The descriptive statistics of serum prolactin are given in Table 2. Premenopausal women had a higher mean serum prolactin level (35.72 ± 26.74 ng/ml) than postmenopausal women (22.48 ± 16.04 ng/ml), although the two groups shared a comparable median value (20.04 ng/ml and 20.27 ng/ml, respectively). The range of values was considerably wider among premenopausal women (4.74–470.00 ng/ml) than among postmenopausal women (5.50–62.48 ng/ml). For the sample as a whole, the mean serum prolactin was 33.07 ± 24.14 ng/ml with a median of 20.27 ng/ml.

Table 1: Socio-demographic characteristics of the study sampled women.

Characteristics		Abnormal uterine bleeding
Age	Mean age, years	45.8 ± 5.17
Marital status*	Married	95 (95.0)
	Divorced	2 (2.0)
	Widow	3 (3.0)
Education	Illiterate	32 (32.0)
	Primary school	45 (45.0)
	Secondary school	11 (11.0)
	University and higher	12 (12.0)
Occupation	Housewives	89 (89.0)
	Employed	11 (11.0)
Smoking	Non-smokers	90 (90.0)
	Current smokers	10 (10.0)

* Mean duration of marriage ± SD was 22.8 ± 5.14 years. Values are expressed as No. (%).

Table 2: Descriptive statistics of S. prolactin level.

S. prolactin [ng/ml]	No.	Mean ± SD	Median	Range
Premenopausal	80	35.72 ± 26.74	20.04	4.74 – 470.00
Postmenopausal	20	22.48 ± 16.04	20.27	5.50 – 62.48
Total	100	33.07 ± 24.14	20.27	4.74 – 470.00

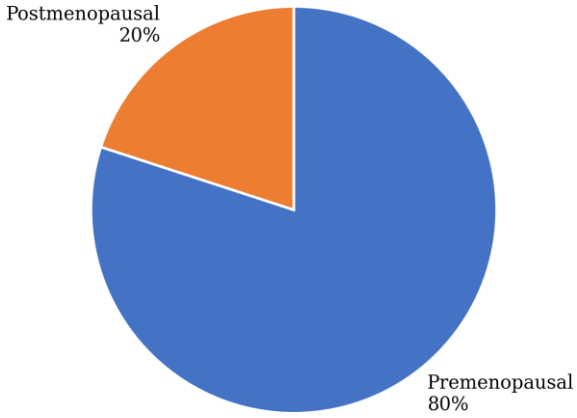

Figure 1: Distribution of study sampled women according to menstrual status.

When the premenopausal women were classified according to their prolactin concentration (Table 3), forty-eight women (60.0%) fell within the normal reference range with a mean value of 12.92 ± 5.59 ng/ml, whereas thirty-two women (40.0%) had hyperprolactinemia with a markedly higher mean value of 69.90 ± 31.44 ng/ml. The independent t-test demonstrated a highly significant difference in mean serum prolactin between these two subgroups (p = 0.001), underscoring the distinct disparity in prolactin levels among premenopausal women with abnormal uterine bleeding.

A comparable pattern was observed among the postmenopausal women (Table 4). Thirteen women (65.0%) had prolactin values within the normal range, with a mean of 12.94 ± 6.85 ng/ml, while seven women (35.0%) were hyperprolactinemic, with a considerably higher mean of 40.20 ± 12.60 ng/ml. The difference between the two means was again highly statistically significant (p = 0.001).

Table 3: The frequency and mean S. prolactin level in premenopausal study sampled women.

S. prolactin level	No.	%	Mean ± SD	P-value*
Normal prolactin [4.00 – 24.99 ng/ml]	48	60.0	12.92 ± 5.59	**0.001**
Hyperprolactinemia [≥ 25.00 ng/ml]	32	40.0	69.90 ± 31.44	
Total	80	100.0	35.72 ± 26.74	---

* Independent t-test of two means was used.

Table 4: The frequency and mean S. prolactin level in postmenopausal study sampled women.

S. prolactin level	No.	%	Mean ± SD	P-value*
Normal prolactin [4.00 – 24.99 ng/ml]	13	65.0	12.94 ± 6.85	**0.001**
Hyperprolactinemia [≥ 25.00 ng/ml]	7	35.0	40.20 ± 12.60	
Total	20	100.0	22.48 ± 16.04	---

* Independent t-test of two means was used.

The relationship between serum prolactin level and menstrual status is presented in Table 5. Normal prolactin levels were recorded in 60.0% of the premenopausal and 65.0% of the postmenopausal women, and hyperprolactinemia in 40.0% and 35.0%, respectively; these proportions did not differ significantly between the two groups (p = 0.682). Similarly, the difference between the mean prolactin level of premenopausal women (35.72 ± 26.74 ng/ml) and that of postmenopausal women (22.48 ± 16.04 ng/ml) did not reach statistical significance (p = 0.330).

When the sampled women were distributed into five age categories, the largest proportion (31.2%) belonged to the 46–50-year-old group, in which the highest frequency of hyperprolactinemia (38.5%) was also recorded. The distribution of hyperprolactinemia across the age categories was nevertheless not statistically significant (p = 0.187).

The association between the pattern of abnormal uterine bleeding and prolactin status in premenopausal women is shown in Table 6. Menorrhagia was the commonest bleeding pattern in the premenopausal group as a whole,

whereas polymenorrhagia was the least frequent. Half of the hyperprolactinaemic women (50.0%) presented with metrorrhagia, compared with only 22.9% of the normoprolactinaemic women, while menorrhagia predominated among the women with normal prolactin (50.0% versus 25.0%). The chi-square test confirmed a statistically significant association between the AUB diagnosis and the prolactin level (p = 0.045), emphasizing the potential relationship between the type of abnormal uterine bleeding and prolactin levels in premenopausal women.

Table 5: The relationship between S. prolactin level and menstrual status in the study sampled women.

S. prolactin level	Pre-menopausal		Post-menopausal		P-value
	No.	%	No.	%	
Normal prolactin [4.00 – 24.99 ng/ml]	48	60.0	13	65.0	0.682*
Hyperprolactinemia [≥ 25.00 ng/ml]	32	40.0	7	35.0	
Total	80	100.0	20	100.0	---
Mean ± SD	35.72 ± 26.74		22.48 ± 16.04		0.330**

* Chi-square test was used. f. = 1. **An independent t-test of two means was used.**

Table 6: Association of AUBs and prolactin level in premenopausal women.

AUBs	Normal prolactin [4.00 – 24.99 ng/ml]		Hyperprolactinemia [≥ 25.00 ng/ml]		P-value*
	No.	%	No.	%	
Metrorrhagia	11	22.9	16	50.0	**0.045**
Menorrhagia	24	50.0	8	25.0	
Polymenorrhoea	2	4.2	3	9.4	
Polymenorrhagia	2	4.2	2	6.3	
Oligomenorrhea	9	18.8	3	9.4	
Total	48	100.0	32	100.0	---

* Chi-square test was used. f. = 4.

The mean prolactin concentration recorded for each bleeding pattern is given in Table 7. The highest mean value was observed in women presenting with metrorrhagia (56.1 ± 94.7 ng/ml), followed by polymenorrhoea (34.8 ± 23.3 ng/ml), oligomenorrhoea (34.1 ± 37.2 ng/ml), menorrhagia (21.36 ± 19.63 ng/ml), and polymenorrhagia (19.16 ± 8.83 ng/ml). Although mean levels differed across the types of abnormal uterine bleeding, one-way analysis of variance showed that these differences were not statistically significant (p = 0.259).

Table 8 presents the relationship between the histopathological result and serum prolactin in premenopausal women. Physiological changes constituted the commonest histopathological finding (n = 35) and were associated with the highest mean prolactin level (53.10 ± 35.6 ng/ml), followed by atrophic endometrium (25.90 ± 16.80 ng/ml, n = 2), hormonal imbalance (23.22 ± 19.13 ng/ml, n = 24) and endometrial hyperplasia (20.51 ± 17.29 ng/ml, n = 19). The one-way ANOVA test indicated that there was no significant difference between these categories (p = 0.150), the overall mean for the premenopausal group being 35.72 ± 26.74 ng/ml.

Among the postmenopausal women (Table 9), the mean serum prolactin was 27.63 ± 13.81 ng/ml in atrophic endometrium (n = 5), 27.11 ± 20.48 ng/ml in endometrial hyperplasia (n = 8), and 12.92 ± 6.54 ng/ml in hormonal imbalance (n = 7), the last representing the lowest value recorded. These differences were likewise not statistically significant (p = 0.316), and the overall mean for the postmenopausal group was 22.48 ± 16.04 ng/ml.

Table 7: Mean prolactin level in premenopausal women with AUBs.

AUBs	No.	Prolactin level [ng/ml]		P-value*
		Mean	SD	
Metrorrhagia	27	56.1	94.7	0.259
Menorrhagia	32	21.36	19.63	
Polymenorrhoea	5	34.8	23.3	
Polymenorrhagia	4	19.16	8.83	
Oligomenorrhea	12	34.1	37.2	

* A one-way ANOVA test was used.

Table 8: The relationship between histopathological results and S. prolactin level in premenopausal study sampled women.

Histopathological results	No.	Prolactin level [ng/ml]		P-value*
		Mean	SD	
Physiological changes	35	53.10	35.6	0.150
Endometrial hyperplasia	19	20.51	17.29	
Hormonal imbalance	24	23.22	19.13	
Atrophic endometrium	2	25.90	16.80	
Total	80	35.72	26.74	

* A one-way ANOVA test was used.

Table 9: The relationship between histopathological results and S. prolactin level in postmenopausal study sampled women.

Histopathological results	No.	Prolactin level [ng/ml]		P-value*
		Mean	SD	
Endometrial hyperplasia	8	27.11	20.48	0.316
Hormonal imbalance	7	12.92	6.54	
Atrophic endometrium	5	27.63	13.81	
Total	20	22.48	16.04	

* A one-way ANOVA test was used.

The correlation matrix between serum prolactin and the other quantitative parameters of the study is displayed in Table 10. Serum prolactin exhibited minimal correlation with age (r = – 0.003, p = 0.954), with the duration of the cycle (r = 0.082, p = 0.517), with menses length (r = – 0.060, p = 0.560), and with endometrial thickness (r = 0.069, p = 0.495). A significant weak positive correlation was, however, demonstrated between serum prolactin and the duration of abnormal uterine bleeding (r = 0.224, p = 0.041). Among the remaining parameters, menses length showed a significant weak negative correlation with the duration of the cycle (r = – 0.267, p = 0.031), while the duration of AUB correlated significantly and negatively with age (r = – 0.266, p = 0.008) and significantly and positively with endometrial thickness (r = 0.212, p = 0.044). Endometrial thickness was in turn significantly and inversely correlated with age (r = – 0.389, p = 0.001).

Table 10: Correlation matrix between S. prolactin and other quantitative parameters in AUBs study sampled women (n = 100).

Parameters	Correlation coefficient*	Age	S. Prolactin	Duration of cycle	Menses length	Duration of AUB
S. Prolactin	r	– 0.003	---	---	---	
	p	0.954	---	---	---	
Duration of cycle	r	– 0.010	0.082	---	---	
	p	0.814	0.517	---	---	
Menses length	r	– 0.125	– 0.060	– 0.267	---	
	p	0.224	0.560	**0.031**	---	
Duration of AUB	r	– 0.266	0.224	– 0.050	0.111	
	p	**0.008**	**0.041**	0.690	0.283	
ET	r	– 0.389	0.069	0.216	0.134	0.212
	p	**0.001**	0.495	0.084	0.192	**0.044**

* The correlation coefficient [Pearson correlation, "simple linear correlation"] was applied. ET = endometrial thickness. Statistically significant values are shown in bold.

5. DISCUSSION

Abnormal uterine bleeding is a frequent condition in gynecology. It may impact physical, emotional, sexual, and professional aspects of the lives of women and impair their quality of life. This study explores the correlation between serum prolactin levels and AUB in women, aiming to understand the potential implications of prolactin in the etiology of AUB. According to the sociodemographic data of the patients, the sampled women were aged between 38 and 61 years, and the mean age was 45.8 years, whereas a study done by Dreisler et al. 2009 reported that the mean age of abnormal uterine bleeding was 41.3 years and ranged from 20 to 74 years.[10] All participants were married, predominantly housewives with a primary school education background (45%) and nonsmokers (90%). While in the Gerema et al.[11] study 2022, only 69% of women were married, 17.1% were housewives, 23% had primary school education, and 93.3% were nonsmokers.

Mean prolactin levels were higher in premenopausal than postmenopausal women. A similar study established by

Toniolo et al. also revealed higher prolactin in premenopausal than postmenopausal women.[12] Regarding hyperprolactinemia [≥ 25.00 ng/ml], specifically in premenopausal women, this study revealed 40% of patients with high levels, which is a statistically significant result. This is close to the Mandal. et al study results, which revealed significant hyperprolactinemia (39.2%) of their patients with AUB.[13] In postmenopausal women, this study also revealed 35% with hyperprolactinemia; these are close results to the study of Ebraheim et al., which revealed 44.4% of postmenopausal women having high prolactin levels.[14] Studying the relationship between S. prolactin level and menstrual status, this study found no significant statistical difference between pre- and post-menopause women. Another study by Tanner et al. involved 6540 sampled women and found that prolactin levels varied significantly throughout the women's lives and menopause status. Different measuring techniques and conditions were used in that study.[15]

Dividing patients into five age categories, the majority of women in the study sample fell within the 46-50 years age range (31.2%). The highest percentage of hyperprolactinemia (38.5%) was observed in the 46-50-year-old age group, although the difference across age groups was not statistically significant (p-value = 0.187). Several studies have investigated the relationship between age and prolactin levels in women. A study by Melmed et al. 2011 found that prolactin levels increase with age in healthy women. Another study by Jain et al. reported a positive correlation between age and prolactin levels in women with hyperprolactinemia. However, a study by Bates et al. did not find a significant association between age and prolactin levels in women with AUB.[16-18]

In terms of cycle pattern and prolactin level in premenopausal women, a significantly higher proportion of women with hyperprolactinemia, about half of them, were observed in the metrorrhagia group compared to the other AUB groups. The chi-square test revealed a statistically significant association between AUB diagnoses and prolactin level (p-value = 0.045). A study by De Leo et al. 2005 found an association between hyperprolactinemia and metrorrhagia in premenopausal women. Whereas a study by Brogden et al. 2007 reported no significant association between prolactin levels and specific AUB patterns, a different method for measurement and AUB pattern categorization was used in their study.[19, 20]

In terms of the relationship between histopathological results and S. prolactin level in premenopausal study sampled women, there was no significance in the statistical results in this study, and the total patients' S. prolactin mean was 35.7 ng/ml. This is similar to the study of Koc et al. 2013 which also found no statistically significant difference between prolactin levels in different histopathologies, but with lower prolactin levels across all categories (28.6 ng/ml). This could be due to differences in sample size, population characteristics, or measurement methods.[21]

In the postmenopausal category there was also no significant difference between S. prolactin and histopathological results, but with a lower overall mean (22.4 ng/ml). According to Ebraheim et al. (2020), there were also no significant results, and the s. The mean of all postmenopausal women was 19.3 ng/ml.[22]

Serum prolactin levels showed weak correlations with various parameters such as age, duration of AUB, and endometrial thickness. Notably, a significant but weak positive correlation existed between prolactin levels and duration of AUB. Several studies have investigated the relationship between AUB duration and prolactin levels. A study by Fauser et al. found no significant association between AUB duration and prolactin levels; the study design was different, and it studied 200 patients. While a study by Pasquali et al. reported a higher prevalence of hyperprolactinemia in women with more AUB duration. Another study by Sharma et al. found a significant positive correlation between prolactin levels and AUB duration.[23-25] This is similar to the study conducted by Ali A. et al. 2023, which revealed a positive, significant, weak correlation between abnormal uterine bleeding and hyperprolactinemia ($r=0.12$) ($p<0.05$).[26] The correlation between serum prolactin and endometrial thickness is weak but statistically significant; slightly similar results were found in the study by Auriemma et al. ($r=0.14$) ($p=0.031$).[27]

6. CONCLUSION AND RECOMMENDATIONS

This study found that abnormal uterine bleeding was more prevalent among premenopausal than among postmenopausal women. Menorrhagia was the most common bleeding pattern, while polymenorrhagia was the least common, and multiparous women were more likely to experience AUB. Hyperprolactinemia was more prevalent among women aged 46–50 years, and no significant relationship was demonstrated between the histopathological findings and serum prolactin. Hyperprolactinemia was diagnosed in patients with abnormal uterine bleeding of non-organic cause in both premenopausal and postmenopausal patients.

Measurement of the prolactin level should therefore be one of the workup investigations in patients presenting with abnormal uterine bleeding. Additional studies are needed to investigate the specific relationship between prolactin levels, AUB, and endometrial changes; these could involve larger sample sizes, more diverse populations, and longitudinal follow-up.

Declaration

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