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Prevalence of Endometrial Hyperplasia among Patients with Abnormal Uterine Bleeding: An Analysis from a Single Centre

Rifat Amin [a], Junaid Kazmi [b*], Beenish Jeelani [a] and Rabia Khursheed [a]

[a] Department of Gynaecology and Obstetrics, Sheri Kashmir Institute of Medical Sciences, Srinagar, J&K, India.
[b] Department of Radiodiagnosis, Sheri Kashmir Institute of Medical Sciences, Srinagar, J&K, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is a frequent cause for gynaecological consultations, often linked to underlying endometrial pathology. Endometrial hyperplasia (EH) is of clinical importance, particularly when atypia is present, due to its potential to progress to endometrial carcinoma (World Health Organization, 2014; Kurman et al., 2014). This study investigates the prevalence of EH in patients admitted with AUB at Sheri Kashmir Institute of Medical Sciences, Srinagar, J&K.

**Corresponding author: E-mail: junaidkazimi@gmail.com;*

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Methods: A retrospective study was conducted, including 73 patients admitted with AUB who underwent endometrial biopsy. The prevalence of EH was assessed, with cases categorized as either hyperplasia without atypia or hyperplasia with atypia.
Results: Out of the 73 patients, 28 cases (38.36%) were diagnosed with EH. Of these, 25 cases (34.25%) had hyperplasia without atypia, while 3 cases (4.1%) had hyperplasia with atypia, highlighting the importance of prompt evaluation in preventing progression to malignancy (American College of Obstetricians and Gynecologists, 2020; Miller et al., 2021).
Conclusion: The findings underscore the necessity of histopathological assessment in AUB cases, especially for identifying atypical hyperplasia, which carries a higher risk of endometrial cancer (Reed et al., 2009; Huang et al., 2020). The study advocates for refining screening protocols and exploring tailored management strategies to optimize patient outcomes.

Keywords: Endometrial hyperplasia; abnormal uterine bleeding; hyperplasia; atypia.

1. INTRODUCTION

Abnormal uterine bleeding (AUB) is a common gynaecological complaint with varying etiologies, ranging from benign conditions to premalignant and malignant disorders (Rodrigues et al., 2019). The risk of endometrial abnormalities, such as hyperplasia or carcinoma, increases with age and is particularly significant in perimenopausal and postmenopausal women (Gompel, 2020).

Endometrial hyperplasia (EH) refers to a proliferation of the endometrial lining caused by prolonged unopposed estrogen exposure. It is classified into two subtypes: hyperplasia without atypia, which carries a low risk of progression to malignancy, and hyperplasia with atypia, a premalignant condition with a high potential for progression to endometrial carcinoma (Zhang et al., 2021).

Recent advances in molecular markers, such as PTEN mutations, microsatellite instability, and hormone receptor profiling, have enhanced diagnostic accuracy and prognostication in EH (Westin et al., 2021; Speroff & Fritz, 2011). Early detection and appropriate management of EH, especially in atypical cases, are crucial to reducing morbidity and mortality associated with endometrial carcinoma.

This study aims to evaluate the prevalence of EH among patients presenting with AUB at Sheri Kashmir Institute of Medical Sciences, Srinagar, J&K. The findings may inform future screening programs and guide evidence-based management strategies for AUB.

2. MATERIALS AND METHODS

2.1 Study Design

This retrospective observational study was conducted at Sheri Kashmir Institute of Medical Sciences, Srinagar, J&K, focusing on patients admitted with AUB.

2.2 Study Population

A total of 73 patients presenting with AUB were included. All patients underwent endometrial biopsy as part of the diagnostic workup. Inclusion criteria comprised women with AUB who consented to endometrial biopsy. Patients with a prior diagnosis of endometrial carcinoma were excluded (Reed et al., 2009).

2.3 Data Collection

Endometrial biopsies were processed using standard histopathological protocols. Diagnosed EH cases were categorized as hyperplasia without atypia or hyperplasia with atypia, per the WHO 2014 classification (World Health Organization, 2014).

2.4 Statistical Analysis

The prevalence of EH was calculated as a proportion of AUB cases. Subgroup analysis differentiated between hyperplasia without atypia and hyperplasia with atypia. Descriptive statistics, including frequencies and percentages, summarized the data (Trimble et al., 2012).

3. RESULTS

3.1 Demographic and Clinical Characteristics

A total of 73 patients with AUB were analysed, with 28 cases (38.36%) diagnosed with EH. Among these, 25 cases (34.25%) had hyperplasia without atypia, while 3 cases (4.1%) had hyperplasia with atypia, representing a high-risk subgroup for malignant progression.

Table 1. Represents the demographic of the study population

Age Distribution	Number of Patients	Percentage (%)
20-30 years	15	20.5
30-40 years	23	31.5
40-50 years	35	47.9

Table 2. Represents the morphological characteristics of endometrium

Morphology	Number of patients	Percentage (%)
Endometrial polyp	5	6.85
Endometrial Hyperplasia without Atypia	25	34.25
Endometrial hyperplasia with atypia	3	4.1
Nonspecific inflammatory findings	10	13.7
Normal findings	30	41.1

Table 3. Depicts menstrual patterns

Menorrhagia	60	82.2
Oligomenorrhea	9	12.3

Table 4. Other conditions

Polycystic Ovary Syndrome (PCOS)	20	27.4
Overweight	7	9.6
Tamoxifen intake	30	41.1
Hypertension	2	2.7
Type 2 diabetes	25	34.2

4. DISCUSSION

This study reports a significant prevalence of EH (38.36%) among patients presenting with AUB at Sheri Kashmir Institute of Medical Sciences, Srinagar, J&K.

This finding aligns with other studies that recognize EH as a common underlying pathology in AUB, particularly among perimenopausal and postmenopausal women.

4.1 Comparison with Similar Studies

Our study's EH prevalence of 38.36% is within the upper range of previously reported data, where EH prevalence in AUB patients typically ranges from 15% to 40%. For instance, a study by Reed et al. found a 22% prevalence of EH in women with AUB (Reed et al., 2009), although they noted variations based on age and risk factors, suggesting that our higher prevalence may reflect patient demographics or institutional differences in diagnostic thresholds.

Similar findings were reported by Trimble et al. who observed that EH was a frequent diagnosis among AUB cases, especially in those aged over 40 years (Trimble et al., 2012). Our study echoes these findings, with a significant proportion of EH cases occurring in women aged 40–50 years, highlighting the need for targeted screening in this age group.

In addition, our finding of atypical hyperplasia in 4.1% of cases is comparable to that of other studies. Lacey et al. noted that atypical hyperplasia in AUB patients typically ranges between 2% and 10%, with our findings falling toward the lower end of this spectrum (Lacey et al., 2010). This consistency suggests a relatively stable incidence rate of atypical hyperplasia across diverse populations, reinforcing its critical role as a high-risk factor for progression to endometrial carcinoma.

4.2 Implications for Screening Guidelines

The findings emphasize the necessity for targeted screening, particularly in high-risk groups such as:

- Women over 45 years old, where the risk of atypical EH and endometrial carcinoma is higher.
- Younger women (<45 years) with risk factors, including obesity, chronic anovulation, or a history of unopposed

estrogen exposure (Rodrigues et al., 2019; Zhang et al., 2021).

Routine endometrial biopsy is crucial for women with persistent AUB, as evidenced by the 4.1% prevalence of atypical hyperplasia in this study, a known premalignant condition (American College of Obstetricians and Gynecologists, 2020). Incorporating molecular diagnostic tools, such as PTEN mutation analysis or microsatellite instability testing, into routine practice could improve early detection rates (Westin et al., 2021; Lacey et al., 2010).

4.3 Implications for Management Guidelines

Management strategies for EH should be tailored based on the severity of the condition:

- Hyperplasia without atypia can be managed conservatively with hormonal therapy, such as oral progestins or a levonorgestrel-releasing intrauterine device (LNG-IUD), alongside regular follow-up (Huang et al., 2020).
- Hyperplasia with atypia, given its 20-30% risk of progression to endometrial carcinoma, often requires definitive management, such as hysterectomy in women who have completed childbearing (Berek et al., 2012).

For younger patients desiring fertility preservation, high-dose progestin therapy may be considered, but this requires careful surveillance with periodic biopsies and imaging (Jamal et al., 2021).

4.4 Broader Clinical Implications

- Integration of imaging and histopathology: Combining transvaginal ultrasound (TVUS) with endometrial biopsy could enhance diagnostic accuracy, especially in cases where histology results are ambiguous (Hoffman, Schorge, et al., 2016).
- Multidisciplinary approach: Collaboration between gynaecologists, radiologists, and pathologists can optimize the evaluation and management of AUB patients, reducing diagnostic delays.

5. STUDY LIMITATIONS

This study's retrospective, single-centre nature may limit the generalizability of the findings. Additionally, the sample size is relatively small, and future research with larger, multi-centre cohorts would help validate these findings. Furthermore, the lack of long-term follow-up limits our understanding of the progression and outcomes of EH, particularly in atypical cases.

6. FUTURE RESEARCH DIRECTIONS

Longitudinal studies following AUB patients with diagnosed EH over time would offer valuable insights into the natural history and risk factors for progression. Additionally, comparisons across different geographic and demographic populations could better inform screening guidelines tailored to regional or institutional patient profiles.

7. CONCLUSION

Endometrial hyperplasia is prevalent in patients presenting with AUB, with 38.36% showing evidence of EH and 4.1% having atypical hyperplasia. These findings underline the importance of routine histopathological evaluation and the potential to refine screening and management protocols. Future guidelines should incorporate molecular diagnostics and personalized care to improve outcomes in AUB patients.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc have been used during writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology.

Details of the AI usage are given below:

1. Chat GPT was used in editing of this manuscript.

CONSENT

Inclusion criteria comprised women with AUB who written consented to endometrial biopsy.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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