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Review

Abnormal Uterine Bleeding: Therapeutic Updates

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ABSTRACT

Abnormal uterine bleeding (AUB) is defined as any uterine bleeding with a pattern, volume or duration outside physiological limits, excluding pregnancy and the puerperium. It affects a significant proportion of women of reproductive age and is particularly prevalent at age extremes, such as during menarche and perimenopause. This condition is associated with anemia, impaired quality of life and increased healthcare costs. The PALM-COEIN classification system organizes causes into structural and non-structural categories, which facilitates clinical decision-making. Management should range from supportive measures to pharmacological, hormonal and surgical therapies, always prioritizing reproductive desire and the underlying etiology. The development of intrauterine devices, antifibrinolytic agents and minimally invasive techniques has expanded the range of therapeutic options, contributing to more effective and personalized treatment.

Keywords: Abnormal uterine bleeding; PALM-COEIN; Tranexamic acid; Levonorgestrel intrauterine system; Minimally invasive therapies

Introduction

Abnormal uterine bleeding is one of the most frequent reasons for gynecological consultations and directly impacts patients' quality of life. It is characterized by changes in the frequency, intensity, duration or regularity of menstrual flow in non-pregnant women[1]. Beyond being a significant clinical issue, AUB compromises physical and emotional well-being, interferes with social and occupational activities and imposes substantial costs on healthcare systems. Its etiology is broad and requires a systematic approach. To facilitate investigation, a classification system was adopted that divides causes into two major groups: structural and non-structural. Structural causes include polyps, adenomyosis, leiomyomas and malignant or hyperplastic changes. Non-structural causes involve coagulopathies, ovulatory dysfunctions, endometrial disorders, iatrogenic factors or unidentified origins[2,3]. Diagnosis requires a thorough history, comprehensive physical examination and complementary tests such as complete blood count, hormonal panels and coagulation studies. Transvaginal ultrasound is essential for initial evaluation, while endometrial biopsy is indicated in suspected cases of hyperplasia or cancer, particularly in women over 45 years of age. Treatment depends on multiple

factors: etiology, age, reproductive goals, symptom severity and response to previous therapies. Management may range from clinical stabilization to hormonal therapies and surgical procedures. Among pharmacological options, tranexamic acid, nonsteroidal anti-inflammatory drugs (NSAIDs) and progestins are noteworthy[5,6]. Levonorgestrel-releasing intrauterine devices (LNG-IUDs) have been widely adopted due to their efficacy and convenience. The evolution of surgical techniques, such as endometrial ablation and operative hysteroscopy, has broadened therapeutic possibilities with lower morbidity. In refractory cases, hysterectomy remains the definitive solution. This article aims to review updates in the therapeutic management of abnormal uterine bleeding, with an emphasis on personalized treatment and the incorporation of new technologies[7,8].

Objectives

This article aims to review the most recent therapeutic updates in the treatment of AUB, based on current guidelines, scientific evidence and technological advances.

Materials and Methods

A literature review was conducted using the PubMed, SciELO, Google Scholar and ScienceDirect databases.

Discussion

The treatment of abnormal uterine bleeding must be guided by a thorough clinical assessment, respecting each patient's individual characteristics. In acute situations, clinical stabilization is the priority, involving volume replacement, blood transfusions and the use of haemostatic medications[9]. Among antifibrinolytics, tranexamic acid is widely used due to its effectiveness in reducing bleeding. NSAIDs, such as ibuprofen, are also useful in reducing menstrual flow and improving associated pain. Hormonal options remain the cornerstone of long-term treatment. The levonorgestrel-releasing intrauterine system stands out as one of the most effective and safe methods, significantly reducing menstrual volume with good tolerability[10]. Combined oral contraceptives also play an important role, especially in women with ovulatory dysfunction. Progestin-only therapies are indicated for patients with estrogenic contraindications, while GnRH agonists are reserved for specific cases such as large fibroids and adenomyosis, despite their significant side effects. The choice of therapy must consider age, fertility desires, contraindications and clinical history.

Surgical interventions are indicated in refractory cases or when a structural cause is confirmed. Techniques such as endometrial ablation and hysteroscopy have shown good outcomes in terms of efficacy and recovery[11,12]. Although definitive, hysterectomy should be reserved for cases where all other options have been exhausted. New therapies, such as selective progesterone receptor modulators (SPRMs), have shown promising results, particularly in patients with fibroids. Therapeutic strategies based on biomarkers and personalized clinical algorithms represent a future trend, aiming to increase efficacy and reduce adverse effects[13]. The challenge in AUB management lies in balancing therapeutic efficacy with quality of life. Patient autonomy, along with evidence-based practices, is crucial for successful treatment[14,15].

Conclusion

Abnormal uterine bleeding is a frequent and complex condition that requires accurate diagnosis and individualized treatment. The introduction of a structured etiological classification has brought greater clarity to the clinical approach, allowing more effective intervention strategies. Pharmacological treatment remains the primary therapeutic approach, particularly with the use of levonorgestrel intrauterine systems and tranexamic acid. Minimally invasive techniques such as endometrial ablation and operative hysteroscopy expand the options for patients who are refractory or have contraindications to clinical therapies. Although effective, hysterectomy should be reserved for selected cases. The future points toward more precise therapies, guided by genetic, hormonal and imaging advancements. The incorporation of these technologies, combined with patient-centered care, has the potential to transform the management of abnormal uterine bleeding, promoting better clinical outcomes and improved quality of life.

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