Understanding menstrual irregularities: Causes, Implications and management.

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Introduction

Menstrual irregularities are a common gynecological concern affecting individuals across different age groups and reproductive stages. A regular menstrual cycle typically ranges from 21 to 35 days, with bleeding lasting between two to seven days. However, many experience deviations from this norm, including missed periods, unusually frequent or infrequent cycles, excessive or minimal bleeding, and severe menstrual pain. While occasional irregularities can be normal, persistent changes in menstrual patterns often signal underlying health issues that merit medical attention.[1,2].

Hormonal imbalances are among the leading causes of menstrual irregularities. The menstrual cycle is priJanily regulated by the intricate interplay of hormones such as estrogen, progesterone, follicle-stimulating hormone (FSH), and luteinizing hormone (LH). Conditions like polycystic ovary syndrome (PCOS), thyroid dysfunction, and hyperprolactinemia can disrupt this hormonal harmony, leading to unpredictable or absent menstruation. Adolescents may also experience irregular periods during the first few years post-menarche due to the body's adjustment to hormonal fluctuations. [3,4].

Lifestyle factors play a crucial role in influencing menstrual health. High levels of physical stress, significant weight changes, eating disorders, excessive exercise, and poor sleep patterns can all contribute to cycle irregularities. Additionally, emotional stress and mental health conditions such as anxiety and depression may affect the hypothalamic-pituitary-ovarian axis, resulting in temporary disruptions in menstrual regularity. Environmental factors, such as exposure to endocrine-disrupting chemicals, are also increasingly being recognized as contributors to hormonal disturbances [5,6].

Chronic conditions such as diabetes, obesity, and cardiovascular disease can further complicate menstrual health. These conditions often intersect with metabolic and endocrine function, exacerbating menstrual irregularities. For example, insulin resistance seen in diabetes and obesity is closely associated with PCOS, one of the most common causes of abnormal menstruation and infertility in reproductive-age women. Such comorbidities require a multidisciplinary approach for effective management. Management strategies vary depending on the underlying cause. Hormonal treatments, such as oral contraceptives or progesterone therapy, are commonly prescribed to regulate cycles. Lifestyle interventions, including stress management, balanced nutrition, and maintaining a healthy body weight, can also have a significant positive impact. In cases where structural abnormalities like fibroids or endometrial polyps are involved, surgical options may be considered. [7,8].

Reproductive life events also bring about changes in menstrual patterns. During perimenopause, fluctuations in hormone levels can lead to irregular and sometimes heavy periods. Conversely, menstruation may cease altogether due to premature ovarian insufficiency or after undergoing procedures such as hysterectomy or chemotherapy. Understanding these transitions is vital for recognizing what constitutes a normal variation versus a condition that needs intervention. Diagnosing the root cause of menstrual irregularities typically involves a detailed medical history, physical examination, and a range of diagnostic tests. Blood tests to assess hormone levels, imaging studies like pelvic ultrasounds, and in some cases, endometrial biopsies, help identify structural or hormonal issues. Timely diagnosis is key to preventing complications such as anemia, infertility, or progression of underlying disorders .[9,10].

Conclusion

Management strategies vary depending on the underlying cause. Hormonal treatments, such as oral contraceptives or progesterone therapy, are commonly prescribed to regulate cycles. Lifestyle interventions, including stress management, balanced nutrition, and maintaining a healthy body weight, can also have a significant positive impact. In cases where structural abnormalities like fibroids or endometrial polyps are involved, surgical options may be considered.

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