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Clinical approaches to managing anaemia caused by menstrual problems in adolescent girls

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Abstract

Adolescent girls are particularly susceptible to anaemia due to heavy menstrual bleeding (menorrhagia), which can adversely affect their physical health, cognitive function, and quality of life. This article explores comprehensive clinical approaches to managing anaemia caused by menstrual problems in this population. The first step involves a thorough evaluation, including medical history, physical examination, and laboratory tests to accurately diagnose anaemia and its severity. Effective management of menorrhagia is crucial and can be achieved through hormonal therapies, such as combined oral contraceptives, progestin-only pills or injections, and the levonorgestrel-releasing intrauterine system, as well as non-hormonal treatments like NSAIDs and tranexamic acid. Treating anaemia involves iron supplementation, with oral iron as the first-line treatment and intravenous iron therapy reserved for cases of intolerance to oral iron, severe anaemia, or malabsorption issues. A comprehensive management plan encompasses addressing menstrual bleeding, nutritional counseling, and patient education. Regular monitoring and follow-up are essential to ensure treatment efficacy and patient compliance. A multidisciplinary approach, involving gynecologists, hematologists, dietitians, and mental health professionals, is recommended to provide holistic care. By addressing both the underlying menstrual issues and the resultant anaemia, healthcare providers can significantly improve the health and quality of life of adolescent girls affected by these conditions.

Keywords: Adolescents, anaemia, menstrual problems

Introduction

Adolescent girls are particularly vulnerable to anaemia due to heavy menstrual bleeding (menorrhagia). This condition can significantly impact their physical health, cognitive function, and quality of life. Effective clinical management is essential to address both the underlying menstrual issues and the resultant anaemia.

Understanding menorrhagia and anaemia in adolescents

Menorrhagia refers to excessively heavy or prolonged menstrual bleeding. It is a common cause of iron deficiency anaemia in adolescent girls, who are already at a heightened risk due to increased iron requirements during growth spurts and menstrual blood loss.

Anaemia is characterized by a reduced number of red blood cells or hemoglobin, leading to symptoms such as fatigue, weakness, dizziness, and cognitive difficulties. In the context of menorrhagia, anaemia results from chronic blood loss and inadequate replenishment of iron stores.

1. Comprehensive evaluation

A thorough medical evaluation is the first step in diagnosing and treating anaemia caused by menstrual problems. This includes:

- **Medical history:** Detailed menstrual history, including the duration, frequency, and volume of bleeding, along with any other symptoms.
- **Physical examination:** General health assessment and specific examination for signs of anaemia (e.g., pallor, fatigue).
- **Laboratory tests:** Complete blood count (CBC) to determine hemoglobin and hematocrit levels, ferritin levels to assess iron stores, and other relevant tests (e.g., coagulation profile, thyroid function tests).

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2. Addressing heavy menstrual bleeding

Management of heavy menstrual bleeding is crucial in preventing and treating anaemia. Clinical approaches include:

Hormonal therapy

- **Combined Oral Contraceptives (COCs):** Regulate menstrual cycles, reduce menstrual flow, and provide contraception.
- **Progestin-only pills or injections:** Suitable for those who cannot take estrogen?
- **Levonorgestrel-releasing intrauterine system (LNG-IUS):** Effective in significantly reducing menstrual blood loss.

Non-hormonal treatments

- **Nonsteroidal anti-inflammatory drugs (NSAIDs)** Such as ibuprofen or mefenamic acid, which reduce menstrual flow and relieve dysmenorrhea.
- **Tranexamic acid:** An antifibrinolytic that reduces menstrual bleeding by promoting blood clotting.

3. Treating anaemia in adolescents with menstrual problems

Once anaemia is diagnosed, effective treatment is essential to replenish iron stores and improve haemoglobin levels. The following treatments can be considered:

Iron supplementation

Oral iron supplements

- **First-line treatment:** Typically the first choice due to their efficacy, ease of administration, and cost-effectiveness.

Common choices

- **Ferrous sulfate:** A widely used form of oral iron that provides a high dose of elemental iron.
- **Ferrous gluconate:** Offers a lower dose of elemental iron but is often better tolerated with fewer gastrointestinal side effects.
- **Ferrous fumarate:** Provides a high dose of elemental iron and is another commonly prescribed option.
- **Dosage and Administration:** Should be taken on an empty stomach for better absorption, but if gastrointestinal side effects occur, they can be taken with food.
- Vitamin C (ascorbic acid) can enhance iron absorption, so taking iron supplements with a glass of orange juice or a vitamin C supplement can be beneficial.

Intravenous iron therapy

Indications

- a. **Intolerance to oral iron:** For patients who experience severe gastrointestinal side effects from oral iron that make adherence difficult.
- b. **Severe anaemia:** When rapid correction of anaemia is necessary, such as in cases of very low haemoglobin levels or significant symptomatic anaemia.
- c. **Malabsorption issues:** Conditions like inflammatory bowel disease or after bariatric surgery, where the absorption of oral iron is impaired.

Common intravenous iron formulations

- a. **Iron sucrose:** Commonly used and generally well-

tolerated.

- b. **Ferric Carboxymaltose:** Allows for higher doses to be administered in a single infusion.
- c. **Iron Dextran:** Requires a test dose due to a higher risk of allergic reactions but can deliver large doses in one infusion.

Procedure

- a. Administered in a clinical setting under medical supervision to monitor for any adverse reactions.
- b. The dosage and frequency of infusions depend on the severity of anaemia and the patient's response to treatment.

4. Comprehensive management plan

Effective treatment of anaemia in adolescents with menstrual problems requires a comprehensive management plan that includes:

- **Addressing menstrual bleeding:** Use hormonal or non-hormonal therapies to reduce menstrual blood loss and prevent recurrence of anaemia.
- **Nutritional counseling:** Educate patients on dietary sources of iron and foods that enhance or inhibit iron absorption.
- **Patient education:** Ensure adolescents and their caregivers understand the importance of adherence to treatment and follow-up appointments.

Dietary interventions

- Encourage a diet rich in iron (e.g., red meat, leafy green vegetables, legumes) and foods high in vitamin C to enhance iron absorption.
- Avoid substances that inhibit iron absorption (e.g., tea, coffee, and high-calcium foods) around meal times.

5. Monitoring and Follow-Up

Regular follow-up is essential to ensure treatment efficacy and patient compliance. Monitoring includes:

- **Regular blood tests:** To track hemoglobin and ferritin levels.
- **Symptom assessment:** Checking for improvements in fatigue, pallor, and overall well-being.
- **Adjustment of treatment plan:** Based on response to therapy and any side effects experienced by the patient.

6. Multidisciplinary approach

Collaboration among healthcare providers ensures comprehensive care:

- **Gynecologists:** For managing menstrual disorders.
- **Hematologists:** For treating complex cases of anaemia.
- **Dietitians:** For nutritional counseling and support.
- **Psychologists / Counselors:** To address any emotional or psychological impacts of chronic health issues.

Conclusion

Effective clinical management of anaemia caused by menstrual problems in adolescents requires a holistic and individualized approach. By addressing both the menstrual disorder and the resulting anaemia, healthcare providers can significantly improve the health and quality of life of affected adolescents. Regular monitoring and a multidisciplinary approach ensure the best outcomes for these young patients.

Conflict of Interest

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