Article type: Editorial

Home Page URL: https://www.alliedacademies.org/hematology-blood-disorders/

Women and clotting disorders: Hormones, pregnancy, and risk factors.

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Received: 02-Jun-2025, Manuscript No. aahbd-25-171220; **Editor assigned:** aahbd-25-171220, PreQC No. aahbd-25-171220 (PQ); **Reviewed:** 17-Jun-2025, QC No. aahbd-25-171220; **Revised**: 24-Jun-2025, Manuscript No. aahbd-25-171220 (R); **Published**: 30-Jun-2025, DOI: 10.35841/aahbd-8.2.223.

Introduction

Blood clotting disorders, also known as thrombophilias, affect the body's ability to regulate hemostasis—the process that prevents excessive bleeding or clotting. While these conditions can affect anyone, women face unique risks due to hormonal fluctuations, pregnancy, and reproductive health choices. Understanding how these factors influence clotting risk is essential for prevention, diagnosis, and management. Clotting disorders are conditions that increase the risk of abnormal blood clot formation. These clots can obstruct blood flow, leading to serious complications such as deep vein thrombosis (DVT), pulmonary embolism (PE), stroke, or miscarriage. Common clotting disorders include: These disorders may be inherited or acquired and often go undetected until a clotting event occurs [1].

Hormones, particularly estrogen, play a significant role in modulating clotting risk. Estrogen increases the production of clotting factors and reduces natural anticoagulants, tipping the balance toward thrombosis. Combined oral contraceptives (COCs) containing estrogen and progestin significantly increase the risk of blood clots, especially in women with underlying thrombophilias [2].

Hormone replacement therapy (HRT) used during menopause also elevates clotting risk, particularly when administered orally. Women with a personal or family history of clotting disorders should consult their healthcare provider before starting hormonal therapies. Pregnancy is one of the most potent natural risk factors for thrombosis. The body undergoes dramatic changes to support fetal development, including: Increased levels of clotting factors, Decreased fibrinolytic activity, Venous stasis due to uterine pressure. These changes create a hypercoagulable state that protects against hemorrhage during childbirth but raises the risk of clot formation [3].

The risk of DVT is five times higher during pregnancy and up to 20 times higher in the postpartum period. Women with clotting disorders such as APS or Factor V Leiden face increased risks of miscarriage, preeclampsia, and placental complications. Diagnosis typically involves: Blood tests to detect genetic mutations or deficiencies in clotting proteins, History-taking to identify prior clotting events or family history. Specialized tests during pregnancy or before initiating hormone therapy [4].

Women with recurrent miscarriages, unexplained pregnancy complications, or thrombotic events should be evaluated for underlying thrombophilias. Treatment and prevention strategies vary depending on the individual's risk profile and life stage. Low-molecular-weight heparin (LMWH) is preferred during pregnancy as it does not cross the placenta. Warfarin and direct oral anticoagulants (DOACs) are used outside of pregnancy but are contraindicated during gestation due to teratogenic effects [5].

Conclusion

Women with clotting disorders may require preventive anticoagulation during pregnancy and postpartum. The decision depends on: Type and severity of the disorder, Personal and family history of thrombosis, Living with a clotting disorder can be emotionally challenging, especially for women navigating pregnancy or fertility treatments. Anxiety about miscarriage, medication side effects, and lifestyle restrictions can affect mental health. Support groups and counseling are valuable resources for coping and empowerment. Despite the prevalence of clotting disorders, public awareness remains low. Many women are unaware

Citation: Rodriguez M. Women and clotting disorders: Hormones, pregnancy, and risk factors. Hematol Blood Disord. 2025;8(2):223.

of the risks associated with hormonal therapies or pregnancy. Advocacy efforts by organizations like the American Society of Hematology and the National Blood Clot Alliance aim to educate women and healthcare providers about clotting risks and prevention strategies.

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