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Thrombosis Risk Stratification: Navigating Guidelines for Obstetricians and Midwives

Identifying thrombosis risk factors is no easy task for midwives and OB/GYN physicians, especially when clinical guidelines are contradictory. However, accurate risk assessment is paramount to ensure the well-being of expectant mothers and their unborn children. Finding an effective way to assess thrombosis risk will help you deliver personalized care with confidence.

Pregnancy introduces a host of physiological changes that mimic thrombotic events, making risk assessment complex and overwhelming. Some of the symptoms of thrombosis, like leg pain, breathlessness, or tachycardia, overlap with normal pregnancy-related discomforts and make it difficult to tell them apart.[1] Recognizing and understanding the risk factors for thrombosis is thus crucial in recognizing and preventing thrombotic events during pregnancy.[2,3]

Although venous thromboembolism (VTE) in pregnancy is common, there is a lack of validated tools to identify it. This concern has been underscored in an analysis by Cochrane in 2014, which found that there is insufficient evidence to best prevent VTE during pregnancy.[4] This highlights the need to craft a consistent, patient-focused strategy to recognize VTE in pregnant women.

Efforts have been made by organizations like The Royal College of Obstetricians and Gynaecologists, the American College of Obstetricians and Gynaecologists, the American College of Chest Physicians, and the American Society of Hematology to provide guidelines on thrombosis risk assessment.[5–8] While these guidelines are comprehensive and cover various aspects of thrombosis, the recommendations they provide are flawed. They vary in their emphasis on specific risk factors and are based on limited evidence.[5,8–10] These differing guideline recommendations create confusion among healthcare practitioners about how to manage thrombosis-related risks.[1,11]

You can address this uncertainty by following one primary guideline source and using others as supportive references. This practice maintains consistency and prevents the potential confusion caused by mixing various guideline standards. Adhering to a single set of guidelines allows you to provide better care to your patients while staying up to date with the latest advancements in thrombosis risk assessment and management.

Risk stratification helps to reconcile these clinical guidelines with individual patient factors. You can achieve this by using risk assessment models like the Caprini and Padua models, which have been modified for obstetric cases.[5,7,12–14]

For instance, the **Caprini model** system assesses the risk of deep vein thrombosis (DVT) based on considerations like age, BMI, medical history, and pregnancy-related factors.[15] This model may classify a

high percentage of women as high risk but fail to identify any venous thromboembolism (VTE) cases.[13]

On the other hand, the **Padua model**, which assesses the risk of DVT and pulmonary embolism (PE) based on factors like age, obesity, previous DVT/PE, and malignancy history, may identify all VTE cases but classifies a very small percentage as high risk.[13]

Newer risk assessment models like the **Shijitan (SJT) model** show superior predictive ability for patients at risk of VTE than the previously mentioned models.[16] This model saves time for physicians by including six specific risk factors that can be easily assessed during patient evaluation. These risk factors include age, lower limb edema, chronic obstructive pulmonary disease, central venous catheterization, VTE history, and D-dimer. By considering these factors, physicians can quickly determine a patient's risk of VTE without the need for extensive testing or evaluation.[16]

The "one-size-fits-all" approach of the above-mentioned models may show overall benefits, but the risk-to-benefit ratio of intervention differs among individual patients within the pregnant population. Therefore, you need to consider the unique risk factors of each patient to prevent overlooking crucial risk markers prior to intervention.

Risk factors that increase the risk of VTE during pregnancy or shortly after giving birth include[17]:

- Increased age
- Illness or infection during pregnancy
- Bed rest
- Long-distance travel
- History of VTE

- Immobilization
- Estrogen contraceptive use
- Active malignancy
- Lower limb edema
- Multiple gestation

It is vital to overlay these patient-specific risk factors with the clinical guidelines for a balanced risk assessment and personalized care.[18,19]

As a healthcare professional, your role in recognizing these risk factors is central to your patients' well-being. Understanding their specific situation, aligning it with guidelines, and applying your clinical judgment are essential for effective thrombosis risk management and informed decision-making. These decisions, which revolve around a patient's risk of thrombosis, are continually shaped by evolving medical knowledge and guidelines.

To stay updated with the latest evidence-based guidelines and apply them effectively to individual cases, it is crucial to engage in ongoing training, case studies, simulations, workshops, and active learning. These experiences will enrich your understanding of how to use the guidelines, ultimately leading to better patient outcomes. This proactive approach helps prevent thrombosis and detect it early when it occurs.[20]

Managing thrombosis risks in obstetric care is incredibly challenging, but it has a significant impact on both the mother and the baby's health. Committing to a personalized approach can help shape a safer future for pregnancies. Minimize thrombosis-related complications by tailoring guidelines to individual patients' risk factors.

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