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Pre-eclampsia and Thrombosis Risk

Pre-eclampsia is associated with a significantly higher risk of venous thromboembolism (VTE) during pregnancy, puerperium and after the puerperium, suggests a recent study published in *JAMA Network Open*[1].

The objective of this observational cohort study was to investigate the association between pre-eclampsia and the risk of VTE during pregnancy, the puerperium and post-puerperium. Researchers identified all primiparous Danish women who gave birth between January 1997 and December 2016 from Danish national registries. These women were followed up from their first pregnancy to the occurrence of incident VTE, emigration, death, or when the study ended in December 2016. The data was analyzed between January and May 2023. The main outcome measured was incident VTE, while all-cause mortality was chosen as the secondary outcome.

In this study, a total of 5,22,545 primiparous women with a median age of 28 years were included. Among them, 23,330 (4.5%) were diagnosed with pre-eclampsia. Women with and without pre-eclampsia were similar in age; however, those with pre-eclampsia had more comorbidities such as diabetes, inflammatory, and autoimmune conditions. Over a median follow-up period of 10.2 years, 0.9% of women developed VTE with a median time of 5.8 years from pregnancy to VTE incidence. The incidence of VTE in women with pre-eclampsia was found to be significantly compared to women without pre-eclampsia. The incidence rate of VTE was 448.8 per 1,000 patient-years for women with pre-eclampsia, while it was 309.6 per 1,000 patient-years for women without pre-eclampsia. This corresponds to an adjusted hazard ratio (aHR) of 1.43.

When specific subcategories of VTE were examined, there were 78.9% cases of deep vein thrombosis (DVT) and 26.3% cases of pulmonary embolism. Pre-eclampsia was associated with an increased rate of DVT with aHR of 1.49 as well as pulmonary embolism with aHR of 1.36. These associations remained consistent in analyses conducted during pregnancy, the puerperium and post-puerperium. Women with thrombophilia were nearly 10 times at higher risk of VTE. During follow-up, 0.4% deaths occurred with incidence being higher in women with pre-eclampsia than without pre-eclampsia with aHR of 1.35.

In conclusion, this study provides evidence to suggest that pre-eclampsia is linked to a significantly higher risk of VTE during pregnancy, the puerperium and even after puerperium, despite controlling for confounding factors. The study highlights the need for future research to focus on improving the clinical management of women with a history of pre-eclampsia in order to prevent VTE. It further emphasizes the significance of increased awareness particularly for women with a history of pre-eclampsia, as VTE is a leading cause of maternal mortality. Women who have had pre-eclampsia during the first pregnancy should be particularly vigilant about the potential risk of VTE. By raising awareness and ensuring appropriate preventive measures are taken, such as early detection and timely intervention, the incidence of VTE-related complications can be reduced thereby improving maternal outcomes. Women with pre-eclampsia also have a higher likelihood of developing other cardiovascular diseases later on highlighting the need to pre-empt development of pre-eclampsia.

REFERENCE

1. Havers-Borgersen E, Butt JH, Johansen M, Petersen OB, Ekelund CK, Rode L, et al. Preeclampsia and long-term risk of venous thromboembolism. JAMA Netw Open. 2023;6(11):e2343804.