The Association of Factor V Leiden with Various Clinical Patterns of Venous Thromboembolism - The Factor V Leiden Paradox

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Background: Factor V Leiden (FVL) supposedly carries relatively higher risk of deep vein thrombosis (DVT), compared to the risk of pulmonary embolism (PE).
Aim: To prove this paradox in a group of patients with various clinical presentation of venous thromboembolism (VTE).
Materials and methods: We retrospectively evaluated clinical pattern of VTE in patients who had been referred to a vascular clinic shortly after an acute VTE event. In FVL positive and FVL negative groups we compared the prevalence of isolated symptomatic DVT (proximal or distal) and symptomatic PE with/without DVT, and, moreover, asymptomatic DVT or PE.
Results: Of 575 patients (mean age 57 years, 50.1% women), 120 were FVL positive and those had significantly higher prevalence of isolated symptomatic DVT, compared to symptomatic PE with/without DVT. Proximal DVT location was significantly more frequent in FVL carriers. The prevalence of asymptomatic PE did not differ between the two groups. The rate of asymptomatic DVT tended to be higher in FVL negative group. In a multivariate analysis, we confirmed FVL to be positively associated with isolated DVT presentation (odds ratio OR 1.757; 95% confidence interval CI 1.148-2.690). On the contrary, increasing age and unprovoked nature of VTE event carried a higher risk of symptomatic PE.
Conclusions: We confirmed FVL to be significantly associated with isolated symptomatic DVT despite higher prevalence of proximal DVT in FVL carriers. The fact of relatively lower risk of PE in FVL positive patients might have clinical implication. However, mechanisms of FVL paradox remain to be elucidated.