Abstract Submission

Clotting
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Homocysteine Levels And Risk Of First Venous Thrombosis: The Influence Of (Unmeasured) Confounding Factors
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Background: Whether there is an association between hyperhomocysteinemia and venous thrombosis (VT) is controversial. Meta-analyses have reported increased risks in individuals with hyperhomocysteinemia but could not fully take confounding into account or exclude publication bias, whereas randomized trials of homocysteine levels were negative.

Aims: The aim of this study was to investigate the effect of homocysteine levels on the risk of VT, overall and stratified by sex and subgroups of type of events.

Methods: Fasting homocysteine levels were measured in 1689 patients with first VT, 787 partner controls, and 939 random digit-dialing (RDD) population controls in a single large case-control study (the MEGA study). Patients were compared with population controls to estimate odds ratios (ORs) by unconditional logistic regression. Results were adjusted for age, sex, BMI, smoking, statin use, history of arterial disease, and regular sports activities. Patients were matched to their partners to additionally adjust for unmeasured confounding factors using conditional logistic regression.

Results: After adjustment for putative confounders, elevated homocysteine levels were not associated with an increased risk for VT when comparing patients to RDD controls, neither as a continuous variable (OR:1.00, 95%CI:0.99,1.01), or in terms of 5 µmol/L increase (OR:0.99, 95%CI: 0.93,1.05), or when levels were >18 µmol/L vs <12 µmol/L (OR:1.02, 95%CI: 0.77,1.34). Similar results were obtained when patients were compared with their partners. Stratification by sex, deep vein thrombosis, pulmonary embolism, provoked and unprovoked VT also provided no evidence of an association.

Summary/Conclusion: In this population-based study, homocysteine levels were not associated with increased risk of venous thrombosis.