Thromb Haemost 1998; 79: 444

Prothrombin 20210A Variant and Age at Thrombosis

Dear Sir,

In their paper on the prothrombin 20210A variant, Hillarp and colleagues confirm our report on an association of this mutation and the risk of venous thrombosis (1). Among 99 consecutive Swedish patients with deep-vein thrombosis, they found seven carriers (7.1%), exceeding the prevalence of 1.8% in 282 controls. This yielded a relative risk estimate of 4.2, which was very similar to the results we found in Dutch patients (2). Interestingly, they found no carriers of the 20210-A allele among patients aged less than 62 years, and they speculate whether the prothrombin variant might lead to increased risks specifically among older age groups.

The data from the Leiden Thrombophilia Study point otherwise: we found carriers of the 20210A variant in all age groups, and, as stated in our paper, an association with the risk of thrombosis in all these age groups. In thrombosis patients below 30 years of age, 6.1% (5 out of 82) were carriers, in individuals aged 30-49 years, 7.8% (17 out of 218) were carriers, and among those aged over 50, 4.1% (7 out of 171) were carriers, whereas among controls we found 2.3% (11 out of 474) carriers. This shows that the prothrombin variant increases the risk among the young and the old. The findings in the Swedish group are most likely due to a very small number of young individuals among the 99 patients (the mean age was reported to be 64 years), although age-dependent differences in other, environmental, risk factors between geographical areas cannot be ruled out as an alternative explanation.

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References

1. Hillarp A, Zoller B, Svensson PJ, Dahlbäck B. The 20210 A allele of the prothrombin gene is a common risk factor among Swedish outpatients with verified deep venous thrombosis. Thromb Haemost 1997; 78: 990-2.
2. Poort SR, Rosendaal FR, Reitsma PH, Bertina RM. A common genetic variation in the 3'-untranslated region of the prothrombin gene is associated with elevated plasma prothrombin levels and an increase in venous thrombosis. Blood 1996; 88: 3698-703.

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The 20210A Allele of Prothrombin Is not Found among Sickle Cell Disease Patients from West Africa

Dear Sir,

A common genetic variation in the 3'-untranslated region of the prothrombin gene has recently been described and shown to be associated with an increase in venous thrombosis (1). At the time of writing, little is known about the ethnic distribution of this polymorphism but it was found to have an allele frequency of 1.2% in a population-based control study from the Netherlands. Thrombotic events are known to be increased in patients with sickle cell disease (SCD) where they represent an important cause of mortality (2). Activation of the coagulation system is well documented in SCD and may contribute to painful vascular occlusive crises, during which it becomes further activated. We are therefore interested in the possible implications of genetic thrombotic risk factors among these patients which could potentially exacerbate their condition.

DNA samples were prepared from 120 patients with homozygous sickle cell disease who are being closely monitored as a part of an SCD cohort in Cotonou, Benin in West Africa. We have screened these DNAs for the 20210A mutation of prothrombin using a Hind III site artificially created during PCR amplification of the appropriate region of the gene, as described (1). None of the subjects within this patient sample were found to have the mutation.

These findings suggest that, as for Factor V Leiden (3, 4), the 20210A prothrombin mutation is not common among people of West African origin and therefore does not contribute to the phenotype or act as a significant risk factor for thrombosis among sickle cell disease patients.

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