

Prothrombin G20210A

PROTHROMBIN G20210A POLYMORPHISM

- Results in a predisposition to elevated plasma prothrombin levels, which increases their risk for thrombosis.
- Elevated prothrombin levels promote the formation of thrombin and inhibit the ability of activated protein C (APC) to inactivate factor Va.
- Seen in 3 to 8% of people with deep vein thrombosis
- By itself, prothrombin G20210A is a relatively weak risk factor for VTE
- In combination with other inherited thrombophilic disorders and risk factors, the risk for VTE's, cerebral vein thrombosis, and myocardial infarctions (especially in young women smokers) increases significantly.

PREVALENCE OF PROTHROMBIN G20210A BY RACE

- Southern Europeans 3.0%
- Northern Europeans 1.7%
- African American 0.2%
- Asian Americans & Native American rare

RISK ASSOCIATED WITH PROTHROMBIN POLYMORPHISM AND VARIOUS RISK FACTORS

Inherited and/or Environmental Risk Factors	Relative Risk
VTE risk for prothrombin polymorphism alone	2- to 3-fold
VET risk with pregnancy	15-fold
VTE risk with use of oral contraceptives (OCPs)	16-fold
VTE risk in combination with factor V Leiden	20-fold
Cerebral vein thrombosis with use of OCPs	149-fold
MI risk for young women (<50 years)	4-fold
MI risk for young women smokers	43-fold
MI risk in postmenopausal hypertensive women	4-fold
MI risk in postmenopausal hypertensive women undergoing HRT	11-fold

Williams, et al. (2004) www.advancesweb.com 13(5):68