



## CLIENT NOTICE

July 27, 2010

### VENOUS THROMBOSIS AND THROMBOPHILIA TESTING

We are pleased to inform you that Gamma-Dynacare has commenced in-house testing for thrombophilia, offering the following tests for which the new reference ranges are indicated:

<u>Test</u>	<u>Reference Interval</u>
Free Protein S	Male: 0.70 – 1.50 U/mL Female: 0.50 – 1.50 U/mL
Protein C Activity	M/F: 0.70 – 1.50 U/mL
Antithrombin Activity	M/F: 0.80 – 1.40 U/mL

Thrombotic risk factors may be broadly defined as any stimulus, condition or factor that increases the chance for that individual to develop thrombosis. Thrombophilias are biochemical predispositions to thrombosis that can be hereditary or acquired. Some have a mixed etiology, where a single risk factor may not increase risk in isolation, but only in the presence of other risk factors.<sup>1</sup>

Hereditary thrombophilias include deficiencies of Protein S, Protein C and Antithrombin as well as the more common Factor V Leiden and G20210A prothrombin gene mutations. Analyses of family studies indicate a roughly 10-fold increase in risk for thrombosis as compared to non-deficient patients.<sup>2</sup> Deficiencies are typically classified into one of three types:

- Type 1: Quantitative deficiency  
Both antigen and activity are decreased
- Type 2: Amount of antigen is normal  
Activity is decreased
- Type 3: Variable but generally both antigen  
and activity are decreased.

Clinicians are advised that testing at the time of acute thrombosis or other illnesses can result in false positives. In addition, Warfarin (Coumadin®) is known to decrease levels of Protein C and Protein S; therefore therapy should be avoided for two weeks prior to testing.

There is inconclusive evidence regarding the use of testing to predict recurrence of thrombosis. Other tests such as D-dimer levels have been shown to have greater predictive value.<sup>2</sup>

If you have any questions or comments, please contact Gini Bourner, Scientific Director, Hematology at 1-866-790-3515 ext. 5220 or by e-mail at [bournerg@gamma-dynacare.com](mailto:bournerg@gamma-dynacare.com).

#### References

1. Laboratory Evaluation of Venous Thrombosis Risk, Clinical Hemostasis Review, Dorothy Adcock, Vol 17, No.12, 2003.
2. Quality in Laboratory Hemostasis and Thrombosis, edited S Kitchen, J Olsen, E Preston, 2009