

THE PROPER UTILIZATION of D-DIMER TEST

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- The negative D-dimer result is helpful to rule out a suspected *deep vein thrombosis* or *pulmonary embolism* in a patient with a low pre-test probability of venous thromboembolism, which is best assessed using a clinical prediction guide such as the Wells criteria or Geneva score.
- Note that D-dimer testing cannot be used as a stand-alone test. The result has to be used in combination with a low pretest probability or a negative compression ultrasound in the case of deep vein thrombosis and with other ancillary testing in the case of pulmonary embolism.
- Hematology laboratories at Shared Health Manitoba provide high sensitivity D-dimer assay with Latex agglutination (immunoturbidometric) method offered by IL, DDimer HS (high sensitivity) and report D-dimers in DDU (D-dimer unit) with a generic cut-off < 230 ng/ml DDU that is provided by the manufacturer.
- The application of D-dimer in clinical settings other than excluding VTE has not been validated. E.g. Use age-adjusted D-dimer cutoffs with caution (the commonly cited 10 x age FEU µg/L from ADJUST-PE study is equivalent to 5 x age DDU ng/ml) as they have neither been validated by our manufacturer nor locally by us.
- Elevated D-dimers are not diagnostic of VTE. Elevated levels of D-dimers are also present in many other physiological or pathological conditions which involve the formation and/or degradation of fibrin. These include DIC, malignancy, infections, cardiac/renal/ liver failure, myocardial infarction, trauma, strokes, sickle cell crises, post-operative, pregnancy and advanced age.
- A normal D-dimer CANNOT be used to exclude a diagnosis of VTE in patients with moderate and high pretest probability.
- D-dimer testing is discouraged in the following situations:
 - Patients with moderate and high pretest probability of VTE
 - Hospital in-patients
 - In patients who have been symptomatic for over 4 days since the sensitivity of the test decreases over time.
 - Recent surgery or trauma within 2 weeks.
- It is not safe to use D-dimer levels to exclude VTE after anticoagulant therapy has been started as anticoagulant therapy reduces D-dimer levels in patients with thrombosis.
- D-dimer negative patients may still develop VTE and should be advised to return when symptoms worsen or if new symptoms develop.
- Pay attention to test method and D-dimer units when you review results from laboratories outside Manitoba. Some laboratories report D-dimer in FEU (fibrinogen equivalent unit) rather than the commonly used DDU (D-dimer unit). Two FEUs are equivalent to one DDU, for example 500 ng/ml FEU is equivalent to 250 ng/ml DDU.

If you have any questions or concerns, please feel free to contact us.

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