Alberta Health Services

Laboratory Bulletin

Date: September 27th, 2016
TO: North and South Zone - Laboratory Directors, Managers, Supervisors, Physicians and Allied Health Care Professionals
From: AHS Laboratory Services
Re: Quantitative D-Dimer Test Changes

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Key Messages:

In October 2016, the Queen Elizabeth II Hospital in North Zone (October 12th) and the Chinook Regional Hospital in South Zone (October 19th) will begin coagulation testing on new instrumentation resulting in changes to the Quantitative D-Dimer reporting units, reference range and cut-off value for exclusion of venous thromboembolism (VTE).

The changes to the report will be as follows:

Reference Interval: < 243 ng/mL

A D-Dimer BELOW 230 ng/mL may be used with a Standardized CLINICAL ASSESSMENT and/or imaging studies to help exclude venous thromboembolism (VTE).

Values ABOVE 230 ng/mL are not diagnostically useful in VTE assessment.

Why this is important:

The primary use of this test is in ruling out the diagnosis of Venous Thromboembolic (VTE) Disease. The test MUST be used in conjunction with a Standardized Clinical Assessment (see attachment) for Deep Vein Thrombosis (DVT) or Pulmonary Embolism (PE), Risk Scores.

The D-Dimer test is designed primarily for Emergency Department use.

Action Required:

The established cut-off value of less than 230 ng/mL has been validated to rule out DVT/PE in patients with LOW or MODERATE risk scores. Patients with a clinical assessment that results in a LOW risk score for DVT, or with a LOW, or MODERATE score for PE are eligible for quantitative D-Dimer testing; a D-Dimer result in these patients BELOW the cut-off value (230 ng/mL) has a negative predictive value of greater than 99% for VTE.

Patients with HIGH RISK scores for DVT/PE should not have quantitative D-Dimer testing.

D-Dimer testing should not be requested in unselected patients with no pre-test clinical assessment. Elevated D-Dimer levels are common in hospitalized inpatients, post-operative patients, and those with cancer, sepsis/inflammation, myocardial infarction, pregnancy, and patients on oral contraceptives. A markedly elevated D-Dimer test result is useful in making a diagnosis of Disseminated Intravascular Coagulation (DIC) in conjunction with the CBC, peripheral blood smear, PT and PTT, fibrinogen level and clinical features.

The Clinical Assessment for DVT/PE risk score is determined prior to ordering the D-Dimer test, and the score MUST be entered into the Meditech system at the time of the D-Dimer test order, if possible. Laboratory staff are unable to enter the Clinical Assessment score.

Inquiries and feedback may be directed to:

Dr. Heidi Paulin, Pathologist-Central Zone, ph: (403) 343-4709 or email: heidi.paulin@ahs.ca
Dr. Krishna Narra, Pathologist-South Zone, ph: (403) 388-6063 or email: krishna.narra@ahs.ca
Dr. Mireille Kattar, Pathologist-North Zone, ph: (780) 407-3373 email: mireille.kattar@ahs.ca

This bulletin has been reviewed and approved by:

Dr. Carolyn O'Hara, Interim Medical Director, AHS Laboratory Services

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Pre-test (D-Dimer) Clinical Assessment for Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE)

Deep Vein Thrombosis (DVT)	Score
Active cancer (Palliative, ongoing or within last six month)	**1**
Paralysis, paresis or recent immobilization of the lower extremity (3 or more days)	**1**
Recently bedridden for 3 or more days or surgery within 12 weeks	**1**
Localized tenderness along deep veins	**1**
Leg Swollen	**1**
Calf swelling greater than 3 cm on affected side (measured 10 cm below tibial tuberosity)	**1**
Pitting edema in symptomatic leg only (non-varicose)	**1**
Previously documented DVT	**1**
Alternative diagnosis as likely or greater	**-2**
DVT Risk Score	

DVT RISK SCORE: LOW <2
DVT RISK SCORE: HIGH ≥2

Pulmonary Embolism (PE)	Score
Signs or symptoms of DVT (objectively measured leg swelling, pain with palpation)	**3**
HR greater than 100 beats/minute	**1.5**
Immobilization for 3 or more days or recent surgery within 4 weeks	**1.5**
Previous DVT or PE	**1.5**
Hemoptysis	**1**
Malignancy (palliative, ongoing treatment or within last 6 months)	**1**
PE is equal to or more likely than alternate diagnosis	**3**
PE Risk Score	

PE RISK SCORE: LOW <2.0
PE RISK SCORE: MODERATE 2.0 – 6.0
PE RISK SCORE: HIGH >6.0