Memorandum

To: Clients / DLS Staff

From: Dr. Wesley J. Kim

Date: March 31, 2011

Subject: Cystatin C

Chronic kidney disease is a significant worldwide health problem, carrying substantial risk for cardiovascular morbidity and death. Glomerular filtration rate is one of the most frequently used criteria for assessing renal function and current guidelines classifying chronic kidney disease are based on the GFR. Serum creatinine is commonly used as a marker for estimating GFR. However, it is well documented that creatinine concentration can be adversely affected by extremes of muscle mass, gender, age, tubular secretion, and assay imprecision. To help compensate for these drawbacks, several predictive equations have been developed and assay standardization is ongoing. However, since the equations often use a serum or urine creatinine result in the calculation, the potential for inaccuracies in the estimation of GFR still exists.

Beginning April 18, 2011 Diagnostic Laboratory Services is pleased to offer on-island in-house testing for Cystatin C. Cystatin C is produced endogenously by essentially all nucleated cells at a remarkably constant rate. Elimination from circulation is almost entirely via glomerular filtration. It is also independent from muscle mass and appears independent from both gender and age. Several published studies have proposed that Cystatin C in serum or plasma is superior to serum creatinine for estimation of GFR. Patient groups which may benefit largely from this assay are those with mild to moderate kidney disease where current calculated estimates for eGFR are not as accurate. It may also be beneficial in those patients with acute renal failure where potentially toxic drugs, which are primarily renal cleared, may need to be administered.

DLS will be using the Roche automated clinical chemistry system which employs an immunoturbidimetric method to quantitate in-vitro cystatin C levels in human serum and plasma. The assay shows good precision with coefficients of variation from 2 to 3%, and a limit of detection of 0.40 mg/L. The manufacturers suggested reference range is 0.47 to 1.09 mg/L. DLS has verified this range with local samples and will continue to monitor the reference range and assay performance once the assay is turned on and make adjustments as needed to ensure proper performance for our local population.

Ordering Information

Test Name	Test Code	Specimen Requirement	Specimen Stability	Reference Range	CPT
Cystatin C	6422	Serum	7 days at 2-8 °C	0.47 – 1.09 mg/L	82610

If you have any questions please contact DLS client services at 589-5101 or Dr. Wesley Kim at 589-5131.