MLABS – DEPARTMENT OF PATHOLOGY
ATTN: IMPORTANT TEST INFORMATION
TEST UPDATE 616

NOTICE DATE: May 3, 2017

EFFECTIVE DATE: May 16, 2017

TESTS DISCONTINUED

Catecholamines, Plasma
Order Code: PCAT
Fee Code: 20930

New Order Code: SCATP
New Fee Code: pending
Reference Laboratory: Specialty 314

Catecholamines, Urine
Order Code: UCAT
Fee Code: 36901

New Order Code: WCATU
New Fee Code: 20412
Reference Laboratory: Warde UCATE

The MLabs Chemical Pathology Laboratory will discontinue Plasma and Urine Catecholamine testing effective May 16, 2017, due to declining test volumes and the availability of Plasma and Urine Metanephrine testing performed by the MLabs Chemical Pathology Laboratory. Please refer to the article below, **Biochemical Screening Tests for Pheochromocytoma**, for additional information.

Requests for Plasma Catecholamines will be sent to Quest Valentia (Specialty) Laboratories

Collection Instructions: The patient should fast overnight and abstain from nicotine, caffeine, alcohol, and strenuous exercise for three hours prior to specimen collection. Patients should be relaxed in either a supine or upright position before blood is drawn. Collect specimen in a pre-chilled green top tube. Centrifuge, aliquot 4 mL (minimum 2.5 mL) of plasma into a plastic vial and freeze within 30 minutes of collection.

Requests for Urine Catecholamines will be sent to Warde Medical Laboratory

Collection Instructions: Collect 24 hour urine specimen. Add 25 mL of 6 N HCl to container prior to start of collection to maintain pH between 1 and 3 and refrigerate specimen during collection. Mix well, measure 24 hour urine volume, aliquot 25 mL (minimum 10 mL) of urine into a plastic urine container and refrigerate. Record total 24 hour urine volume and collection dates/times on request form.

Biochemical Screening Tests for Pheochromocytoma

by Don Giacherio, Director of MLabs Chemical Pathology Laboratory
May 3, 2017

Pheochromocytoma and extra-adrenal paragangliomas are relatively rare tumors derived from neural crest tissue and characterized by the excess production of the catecholamines epinephrine, norepinephrine, and dopamine. Roughly 80 to 85% of these tumors are located within the adrenal gland. The classic clinical features of these tumors, paroxysmal episodes of headache, sweating, and palpitations, are a direct result of the overproduction of these catecholamines. Other common presenting symptoms include hypertension, flushing, anxiety, and constipation. The presentation and symptoms show tremendous variability among patients, due in large part to the variable production and episodic secretion of catecholamines.

Fractionated plasma free metanephrines by LC-MS/MS (order code **PMETN**) is the recommended initial biochemical screening test for pheochromocytoma. Metanephrine and normetanephrine are the 3-methoxy metabolites of epinephrine and norepinephrine. They are produced primarily within the tumor itself and co-secreted with the catecholamines. Because they are more stable and have a longer half-life than the catecholamines, patients with pheochromocytoma will have higher and more sustained elevations of metanephrines in plasma. Measurement of fractionated plasma free metanephrines has a sensitivity approaching 100%, making it a good test for excluding pheochromocytoma. Patients with normal levels of plasma metanephrines are extremely unlikely to have this tumor.

Because of the extremely low prevalence of pheochromocytomas, not all patients with a positive plasma metanephrine test will actually have the tumor. Many pre-analytical factors including stress, exercise, posture at blood draw, antidepressant and antihypertensive drugs may all contribute to very modest elevations of plasma metanephrines. Because of the potential for false positive results, a second biochemical test is recommended to confirm elevated plasma metanephrine results. The best confirmatory test is a 24 hour urine total fractionated metanephrines (order code **METAN**). In the vast majority of cases, the combination of plasma and urine metanephrine tests will be adequate to either confirm or rule out pheochromocytoma. In rare cases if the results of this combination of tests are inconclusive or clinical suspicion is high despite equivocal results, measurement of 24 hour urine catecholamines may be indicated (order code **WCATU**).

REFERENCES

1. Eisenhofer G: Free or total metanephrines for diagnosis of pheochromocytoma: What is the difference? Clin Chem 2001; 47:988-989
2. Algeciras-Scimnich A, Preissner CM, Young WF Jr, Singh RJ, and Grebe SK: Plasma chromogranin A or urine fractionated metanephrines follow-up testing improves the diagnostic accuracy of plasma fractionated metanephrines for pheochromocytoma. J Clin Endocrinol Metab 2008; 93:91-95
3. Van Berkel A, Lenders JWM, and Timmers HJLM: Biochemical diagnosis of phaeochromocytoma and paraganglioma. Eur J Endocrinol 2014; 170: R109-R119.

MLABS – DEPARTMENT OF PATHOLOGY
ATTN: IMPORTANT TEST INFORMATION
TEST UPDATE 616

EFFECTIVE DATE: May 1, 2017

NEW TEST

Coagulation Factor 9 Activity, Chromogenic
Order Code: CHF9
Fee Code: BA013

Please note that the MLabs Coagulation Laboratory is offering a Chromogenic Factor 9 assay effective May 1, 2017. This test is used for monitoring Factor 9 replacement therapy in Hemophilia B.

Collection Instructions: Collect specimen in a blue top (citrate 3.2%) tube. Mix by inversion. Specimen should arrive at lab within 3 hours of collection; transport at room temperature. Alternatively, centrifuge, aliquot plasma into a polypropylene plastic vial, and freeze the specimen within 4 hours of collection. Transport frozen specimen on dry ice. Collection of the blood through lines that have been previously flushed with heparin should be avoided. If the blood must be drawn through a VAD (vascular access device), the line should be flushed with 5 mL of saline and the first 5 mL of blood or six dead space volumes of the VAD discarded.

Reference Range: 50 – 150%