Billings Clinic

Laboratory Communiqué

Volume 12 , Number 4

October 2018

The Laboratory Communiqué is a quarterly publication released by Billings Clinic Laboratory Services as an informational tool for medical staff and laboratorians.

In This Issue

New Tests

Procalcitonin (PCT)

Test Number: 7468

CPT: 84145

LOINC: 75241-0

New Testing

Procalcitonin

Clinical: Procalcitonin (PCT) is a biomarker associated with the inflammatory response to bacterial infection that aids in the risk assessment of critically ill patients on their first day of ICU admission for progression to severe sepsis and septic shock. The percent change in PCT level over time aids in the prediction of cumulative 28-day mortality in patients with severe sepsis and septic shock.

Early after multiple traumas, major surgery, severe burns or in neonates, PCT levels can be elevated independently of an infectious process, but the return to baseline is usually rapid. Viral infections, bacterial colonization, localized infections, allergic disorders, autoimmune disease and transplant rejection do not usually induce a significant PCT response (values <0.5 µg/L). Therefore, PCT is an important marker enabling specific differentiation between a bacterial infection and other causes of inflammatory reactions.

Methodology: Electrochemiluminescence immunoassay (ECLIA) on the ROCHE Cobas e411.

Specimen: Plasma from a Lithium Heparin tube (green top)

Stability: Stable for 24 hours at 15-25ºC, 48 hours at 2-8ºC, 3 months at -20 ± 5ºC.

Measuring range: 0.02 – 100 ng/mL. Values below the Limit of Detection are reported as <0.02 ng/mL. Values above the measuring range are reported as >100 ng/mL.

Testing Schedule: 24/7

Go-Live: October 22, 2018

FLU Kit Change

OSOM® Ultra Flu A&B

Test Numbers
BC: 6847
Mayo Access: BCL 364

CPT: 87400 x2

LOINC: 80381-7

Limitations: Increased PCT levels may not always be related to systemic infection. These include, but are not limited to:

- Patients experiencing major trauma and/or recent surgical procedure including extracorporeal circulation or burns.
- Patients undergoing treatment with OKT3 antibodies, OS-432, interleukins, TNF-alpha and other drugs that stimulate the release of pro-inflammatory cytokines or result in anaphylaxis.
- Patients diagnosed with active medullary C-carcinoma, small cell lung carcinoma or bronchial carcinoid.
- Patients with acute or chronic viral hepatitis and/or decompensated severe liver cirrhosis (Child-Pugh Class C).
- Patients with prolonged or severe cardiogenic shock, prolonged severe organ perfusion anomalies or after resuscitation from cardiac arrest.
- Patients receiving peritoneal dialysis or hemodialysis treatment.
- Patients with biliary pancreatitis, chemical pneumonitis or heat stroke.
- Patients with invasive fungal infections (e.g. candidiasis, aspergillosis) or acute attacks of plasmodium falciparum malaria.
- Neonates during the first 2 days of life.

Interpretation: Measuring serum/plasma PCT in critically ill patients has value for evaluating risk of sepsis, but the results need be interpreted with caution, taking into account diverse clinical settings and limitations.

Providers: for additional information, please refer to "*Up To Date*". This laboratory will not do Procalcitonin interpretations for providers.

FLU KIT Change

OSOM® Ultra Flu A&B

Rapid Influenza Diagnostic Tests (RIDTs) are immunoassays that can identify the presence of influenza A and B viral nucleoprotein antigens in respiratory specimens. While they tend to show good specificity, they can deliver less-than-optimal sensitivity in respiratory specimens compared to RT-PCR or viral culture.

Based on these concerns, the FDA reclassified antigen-based RIDTs as Class II devices to improve the overall quality of testing for influenza. The FDA has provided certain performance criteria that manufacturers must meet to market their influenza assays.

Education

Annual Fall Education Conference

November 2nd

Reference Range Changes

Hematology:
Plavix Response

Chemistry:
Creatinine
BUN
Amylase
Direct Bilirubin

The flu kit that Billings Clinic has used in the past years, fulfills the Class II requirements for swabs, however, it was unable to fulfill the qualifications for wash specimens. The current flu kit will be phased out and completely replaced with the OSOM® Ultra Flu A&B kit.

Specimen collection is the same. Nasopharyngeal washes and aspirate testing is performed in the laboratory only. Nasal and nasopharyngeal swab testing is performed in the laboratory and at specific POC testing areas.

Some changes with the new kit:

- Collection swab is different and specific to the different testing device.
- Negative results cannot be determined for 15 minutes.
- Co-infections with Influenza A and B are rare. Specimens positive for Influenza A and B must be re-tested. Repeatable positive Influenza A and B results must be confirmed by cell culture or PCR testing before reporting results.

EDUCATION

Annual Fall Education Conference

The annual conference for laboratorians is scheduled for Friday, November 2, 2018 in the Billings Clinic Mary Alice Fortin Health Conference Center in rooms B/D. The combination of clinical and professional topics provides an array of interesting and relevant information in today's everchanging laboratory setting. The presentations will also available via the Eastern Montana Telemedicine Network. The agenda is:

10 to 11 AM	**Getting Rid of the Rules of 3** Jason Anderson, Field Product Specialist *Sysmex*
11AM to 12 PM	**IVF in the New Era of Freezing, Genetic Testing and Personalized Single Embryo Transfers** Colleen Milroy, MD *Billings Clinic*
12 to 1 PM	**Q & A Luncheon with Billings Clnic Pathologists**
1 to 2 PM	**A "Gross" Look at Pathology** Parker Marquardt, PA, ASCP *Billings Clinic*

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2 to 3 PM	**Rural Challenges: Mental Health & Substance Abuse** Eric Arzubi, MD *Billings Clinic*
3 to 4 PM	**Life's Toolbox** Jewell Zweegman, LMT, MR, WLS *Billings Clinic*

Conference questions and requests for additional information may be forwarded to Jen DeVries at (406) 657-4888.

Reference Range Changes

Hematology

Test	Previous Range	New Range
Plavix Response	194 – 418 PRU	182 – 335 PRU

Effective November 1st, the following tests will have a change made to the Reference Range due to a recent in-house normal range study.

Chemistry

Test	Previous Range	New Range
Creatinine – Female	0.6 – 1.0 mg/dL	0.6 – 1.2 mg/dL
Creatinine – Male	0.7 – 1.3 mg/dL	0.8 -- 1.5 mg/dL
BUN – Female	7 – 18 mg/dL	7 – 23 mg/dL
BUN –Male	7 – 18 mg/dL	10 – 20 mg/dL
Amylase	25 – 115 IU/L	23 –108 IU/L
Direct Bilirubin	0.0 – 0.2 mg/dL	0.05 – 0.2 mg/dL

For more information about Billings Clinic Laboratory please call (406) 657-4060.
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