Beaumont

Beaumont Laboratory

Laboratory Bulletin

Procalcitonin

Effective Date: September 12, 2017

Procalcitonin (PCT) has been shown to help decrease inappropriate antibiotic use and thereby decrease the rate of rise of antibiotic resistance**. It should only be ordered in patients if it will change antibiotic management.** It has been studied in a number of disease states, but the best evidence for use is as an aid in deciding whether to start antibiotics in patients with potential lower respiratory tract disease, as well as an aid in deciding to stop antibiotics in patients with suspected/confirmed sepsis.

- It should **not be used without incorporating other clinical & lab data**
- Cannot be used in localized infections, e.g. cellulitis, meningitis
- Cannot distinguish between infection and colonization, e.g. asymptomatic bacteriuria vs. UTI
- Should not be used to alter accepted management of documented infections, e.g. pyelonephritis, Staphylococcus aureus bacteremia, etc.
- **NOTE: Use of PCT will be audited by the Antimicrobial Stewardship Team and feedback to providers on appropriateness will be performed on an ongoing basis.**

PCT is a precursor of calcitonin and is thought to increase during bacterial infections as a result of bacterial blockade of calcitonin synthesis. In patients with bacterial infections it rises rapidly (detectable within 2-4 hours and peaks within 6-24 hours) and declines with control of infection. Unlike many other inflammatory biomarkers (e.g. C-reactive protein, ESR) PCT is not elevated in most non-infectious processes or non-bacterial infections. It is undetectable in healthy patients.

Guidelines for interpretation are as follows:

If using as an aid in deciding whether or not to start antibiotics for lower respiratory tract infections:

- PCT < 0.1 ng/mL – antibiotics strongly discouraged
- PCT 0.1-0.25 ng/mL – antibiotics discouraged
- PCT 0.26-0.5 ng/mL – antibiotics encouraged
- PCT > 0.5 ng/mL – antibiotics strongly encouraged

If using as an aid in deciding whether or not to discontinue antibiotics for suspected/confirmed sepsis:

- PCT ≤ 0.5 ng/mL or > 80% decrease from peak/baseline value – antibiotics discouraged
- PCT > 0.5 ng/mL and < 80% decrease from peak/baseline value – antibiotics encouraged

Laboratory Requirement:

Sample:	Light Green-top PST tube (Minimum Whole Blood: 2.0 mL)
Availability:	24/7 with in-lab turnaround time of 2 – 4 hours** at GP, RO, Troy
	** Farmington Hills samples will be transported to Royal Oak
Codes:	Epic: LAB6906; Soft: PCT; CPT: 84145

Continue to next page

Beaumont

Beaumont Laboratory

If you have questions, please contact Client Services (1-800-551-0488, option 5).

Laboratory Test Directory: http://beaumontlaboratory.com/test-lab-directory.

Date submitted: July 7, 2017

Submitted by:

Paul Chittick, MD
Director of Antimicrobial Stewardship, Infectious Disease, Royal Oak

Elizabeth Sykes, MD
Medical Director, Automated Chemistry & Special Testing, Royal Oak

Steven Truscott, PhD
Technical Director, Stat Lab, Royal Oak

David Grossman, MD
Chief, Pathology and Laboratory Services, Troy

Sachi Gowda, MD
Chair, Infectious Disease, Troy

Vaishali Pansare, MD
Chief, Laboratory Medical Director Microbiology, Grosse Pointe

Renee Jiddou-Yaldoo, MD,
Infectious Disease, Grosse Pointe

Wiley Fan, DO
Medical Director, Quality and Patient Safety, Farmington Hills

Alex Green, MD
Associate Pathologist, Chemistry, Farmington Hills