Clinical Pathology Selected Abstracts, 3/13

Clinical pathology abstracts editor: Deborah Sesok-Pizzini, MD, MBA, associate professor, Department of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, and medical director, Blood Bank and Transfusion Medicine, Children's Hospital of Philadelphia.

Fasting time and lipid levels in a community-based population

Guidelines recommend laboratory measurement of lipid levels when the patient is in a fasting state, which is more than eight hours after the last meal. However, more recent studies have shown that this may not be necessary, and, in fact, may mask some nonfasting markers that may better predict cardiovascular events. Furthermore, the fasting and nonfasting lipid levels were shown to change minimally in patients. The authors conducted a large-scale study to investigate the association between fasting times and lipid levels in an unselected population. They examined laboratory data and fasting duration during a six-month period using a large cohort from Calgary, Canada. The authors hypothesized that lipid levels would not vary significantly with the duration of the fasting times. A linear regression model that controlled for individual ages was used to estimate the mean levels of cholesterol subclasses at different fasting times for a total of 209,180 people. The authors showed that the mean calculated low-density lipoprotein cholesterol levels changed up to 10 percent and the triglyceride levels up to 20 percent in patients with different fasting times recorded. However, the mean levels of total cholesterol and high-density lipoprotein cholesterol varied by less than two percent with different fasting times. The authors concluded that fasting prior to routine lipid level measurements may be unnecessary. These findings support the conclusions of previous smaller studies. Eliminating the fasting requirement may make it more convenient for patients and encourage compliance with patient testing for cholesterol measurements.

Sidhu D, Naugler C. Fasting time and lipid levels in a community-based population. A cross-sectional study [published online ahead of print November 12, 2012]. *Arch Intern Med*. doi:10.1001/archinternmed.2012.3708.

Correspondence: Dr. Christopher Naugler at christopher.naugler@cls.ab.ca

Utility of point-of-care testing in emergency department triage

Patients entering an emergency department are commonly triaged. Although signs and symptoms are often part of the triage criteria, laboratory testing is typically not considered when prioritizing patients. This is due to the longer turnaround times to receive results when standard testing is used. Implementing point-of-care (POC) testing in the emergency room would allow patients to be risk stratified based on rapid turnaround times. The authors conducted a prospective observational study on a convenience sample of emergency department patients who were triaged to the waiting room area at an inner-city academic hospital. The patients received triage POC laboratory testing if they met one or more of the following criteria: chest pain or shortness of breath in patients older than 40 years; possible infection in the presence of two or more systemic inflammatory response system criteria in patients older than 18 years; or non-traumatic complaints in patients older than 65 years. Three-hundred people were enrolled in the study. Patients were selected because there was high potential that a laboratory test would change their triage level. All study patients received POC testing that included a combination of Chem 8+, hemoglobin, troponin, B-type natriuretic peptide, and lactate. The POC testing was done using Abbott's i-Stat system. The turnaround time for testing ranged from two to 10 minutes. POC results were given to the triage nurse, who then completed a survey regarding the helpfulness of the results and changes in levels of clinical concern or clinical management or in triage levels. POC lab results were reported to be helpful to the triage nurse for 56 percent of the patients, and four percent of the patients had their triage levels increased to higher acuity levels while 15 percent had their clinical management levels changed to "safe to wait." The authors concluded that adding POC testing may be beneficial in crowded emergency departments when the expected wait time is prolonged or potentially high-risk patients are required to wait.

Soremekun OA, Datner EM, Banh S, et al. Utility of point-of-care testing in ED triage [published online ahead of print October 22, 2012]. *Am J Emerg Med.* doi:10.1016/j.ajem. 2012.07.025.

Correspondence: Dr. O. A. Soremekun at olanrewaju.soremekun@uphs.upenn.edu

Prognostic value of plasma lactate levels in patients with acute pulmonary embolism

Pulmonary embolism is the third leading cause of death due to cardiovascular disease, and its morbidity has not decreased in recent decades. Identifying acute patients who are at higher risk of death or severe morbidity is challenging because only a few patients with acute pulmonary embolism will present with shock. The authors conducted a study to evaluate the prognostic value of plasma lactate levels in patients with acute pulmonary embolism. They performed an observational study of 270 patients with acute pulmonary embolism. The authors studied adult patients who presented to the emergency room with clinical suspicion of pulmonary embolism and a life expectancy of more than three months. The established end point was all-cause death within 30 days after presentation. The plasma lactate concentration was determined on arterial blood within six hours of presentation to the emergency department. The authors considered plasma lactate values of 2 mmol/L or more to be abnormal. The investigators found that mortality progressively increased with higher plasma lactate levels. This was true independent of the presence of shock, hypotension, or markers of right-sided ventricular dysfunction or injury. In addition, plasma lactate levels may help identify normotensive patients who may benefit from more aggressive treatment than heparin. The authors noted that a multicenter study is warranted to further analyze the prognostic value of plasma lactate concentrations in patients with pulmonary embolism.

Vanni S, Viviani G, Baioni M, et al. Prognostic value of plasma lactate levels among patients with acute pulmonary embolism: the thrombo-embolism lactate outcome study [published online ahead of print January 7, 2013]. *Ann Emerg Med*. doi:10.1016/j.annemergmed.2012.10.022.

Correspondence: Dr. Simone Vanni at simo nevanni@alice.it