

KIDNEY DISEASE

Screening for CIN Risk

An enhanced computed tomography (CT) scan can do more harm than good for patients with renal insufficiency, due to the risk of contrast-induced nephropathy (CIN). And the most common method of screening patients for CIN risk may not be the best method, according to researchers from the Hospital of the University of Pennsylvania, Philadelphia.

Evidence suggests that the most accurate indication of renal insufficiency is a creatinine clearance (CrCl) of less than 60 mL/min. But because most emergency departments (EDs) don't measure CrCl routinely, they often use a serum creatine (Cr) level of greater than 1.5 mg/dL to identify patients in whom the risk of CIN precludes an enhanced CT. To put this proxy measurement to the test, the researchers conducted a post-hoc study in which they compared Cr levels and CrCl in 765 ED patients with acute, nontraumatic, abdominal pain who were being considered for a CT scan.

A total of 108 patients (14%) had a CrCl of less than 60 mL/min and, therefore, were at risk for CIN due to renal insufficiency. Of these patients, 43 (40%) had a Cr level of less than 1.5 mg/dL, which means that using this common Cr level cutoff would have misidentified them as safe for enhanced CT. In addition, using a Cr level cutoff of 1.5 mg/mL would have misidentified 10 patients with sufficient renal function as being at risk for CIN. These data suggest a sensitivity of 60% and a specificity of 98% for the 1.5-mg/dL Cr cutoff.

Using more conservative Cr level cutoffs did not yield ideal results either, the researchers found. Setting the

Cr threshold at 1.2 mg/dL increased sensitivity to 81% but decreased specificity to 88%, and a Cr level cutoff of 1 mg/dL yielded a sensitivity of 91% but a specificity of 70%. And while choosing a less conservative Cr level cutoff of 1.8 mg/dL yielded a specificity of 99.9%, the sensitivity dropped to 45%.

Because of the "marked disparity" between Cr levels and CrCl in their study, the researchers advise stratifying patients based on CrCl. They also note that their data suggest that more patients may be at risk for CIN than was previously thought.

Source: *Am J Emerg Med.* 2007;25(3):268–272.

INFECTION CONTROL

The Value of Silver Zeolite

Inserting a central vascular catheter (CVC) into a patient carries the risk of catheter-related colonization, which, in turn, can lead to catheter-related bloodstream infection. But researchers from University Hospitals of Leicester NHS Trust, Leicester, United Kingdom suggest that using silver zeolite-impregnated CVCs can reduce colonization risk significantly.

The researchers studied 246 CVC insertions—124 with control CVCs and 122 with silver zeolite-impregnated CVCs—over 14 months in the intensive care units of three acute care hospitals. They found tip colonization with 73% of the control CVCs but only 58% of the silver zeolite-impregnated CVCs, a statistically significant difference.

In particular, there were significantly fewer coagulase negative staphylococci tip colonizations in the silver zeolite-impregnated CVCs than in the control CVCs (34% versus 47%, respec-

tively). The rates of catheter-related bloodstream infection were comparable between the groups (each had four confirmed episodes), though this finding was not statistically significant.

No signs of silver ion toxicity were found in any of the study patients. The researchers attribute this result to the fact that the "minute quantities" of silver ion available on the catheter surface are enough to exert a local antimicrobial effect on blood and body fluids but too little to cause toxicity.

Source: *J Infect.* 2007;54(2):146–150.

PAIN MANAGEMENT

Amputation Pain: Before and After

The intensity of pain that a patient experiences before and immediately after a limb amputation may predict the intensity of pain during the months that follow. This was the finding of researchers from the University of Washington and Harborview Medical Center, both in Seattle, WA, who conducted a two-year study of 57 patients with lower limb amputations.

The patients were asked to rate the intensity of: pain shortly before amputation; phantom limb pain (PLP) and residual limb pain (RLP) in the days following amputation; and PLP and RLP pain at six, 12, and 24 months postamputation. The researchers found that PLP intensity in the days following amputation was the single best predictor of PLP intensity at six months and one year, while preamputation pain intensity was the single best predictor of PLP intensity at two years. RLP intensity in the days following amputation was the best independent predictor of chronic RLP intensity.

Continued on page 65

Continued from page 60

These results indicate that intense pain before or immediately following an amputation can help to identify patients who are at risk for chronic pain and in need of intervention, say the researchers. They note that higher intensity RLP might be a proxy measure of residual limb problems, comorbid conditions, and other health issues and that many residual limb problems can be resolved with surgery or prosthetic adjustments.

Source: *J Pain*. 2007;8(2):102–109.

DIABETES MANAGEMENT

Diabetes and Depression

A scale that is commonly used to measure depression among patients with diabetes may be a more accurate measure of diabetes-specific distress that is distinct from depression, say researchers from University of California, San Francisco and Kaiser Permanente of Colorado, Denver.

They used three mental health measures—the Center for Epidemiological Studies Depression Scale (CESD), the Composite International Diagnostic Interview (CIDI), and the Diabetes Distress Scale (DDS)—to assess 506 patients with type 2 diabetes. The CESD is a self-administered questionnaire and one of the most widely used methods of depression assessment, but it can only suggest “likely depression,” rather than diagnose clinical depression. In contrast, the CIDI is a structured patient interview that can yield gold standard diagnoses of clinical depression. It is rarely used to screen for depression among patients with diabetes, however, because it is time consuming and expensive. The DDS measures emotional distress that is specific to diabetes.

The researchers found that a substantial number of patients had differing results on their CESD and CIDI assessments and that the results of the

CESD were associated with those of the DDS. The CESD failed to suggest likely depression for about one third of the patients diagnosed as clinically depressed by the CIDI, while 70% of the patients for whom the CESD suggested likely depression did not receive CIDI diagnoses of clinical depression. In addition, the CESD and DDS results had both shared and independent links to diabetes-related biological and behavioral measures (such as hemoglobin A_{1c} levels and number of kilocalories consumed per day).

These results suggest that most patients with diabetes who exhibit high levels of depressive symptoms are suffering not from clinical depression but from diabetes-related distress, according to the researchers. They offer this conclusion as an explanation for why treatments that work for clinical depression often have little or no effect on diabetes management. The researchers suggest replacing such depression treatments with problem solving or coping interventions that address the personal, health-related, and social causes of distress for patients with diabetes.

Source: *Diabetes Care*. 2007;30(3):542–548.

WOMEN'S HEALTH

Is It PID or Appendicitis?

A woman in her late 20s comes to the emergency department with nausea, vomiting, and abdominal tenderness. Does she have appendicitis or pelvic inflammatory disease (PID)? Given the importance of early diagnosis and treatment of appendicitis, the distinction is crucial—and often difficult to make.

But differentiating the two may become somewhat easier, thanks to findings by researchers from Okinawa Hokubu Hospital and Okinawa Chubu Hospital, Okinawa, Japan; University of Florida, Gainesville; University of Hawaii, Honolulu; and St. Luke's Life

Science Institute, Tokyo, Japan. They studied the medical records of 181 women of childbearing age who, having presented to an emergency department with abdominal pain, were found to have either appendicitis (n = 109) or PID (n = 72).

The researchers found that PID is more likely if the patient has bilateral abdominal tenderness, no migration of pain, and no nausea or vomiting. Although each factor individually isn't enough to rule out acute appendicitis, they say, the combination should be 99% sensitive, making it useful as a quick guide for decision making. ●

Source: *Am J Emerg Med*. 2007;25(2):152–157.