Clinical Digest

EMERGENCY MEDICINE

Hypotension and Hospital Mortality

Nontraumatic, out-of-hospital hypotension may be a significant predictor of in-hospital mortality, say researchers who studied more than 10,000 adult patients at two North American medical centers. The researchers—who hail from the Carolinas Medical Center, Charlotte, NC; the University of Ottawa, Ontario, Canada; and the University of Arizona, Tucson—found that those whose blood pressure was less than 100 mm Hg during emergency transport to the hospital had about a 30% higher risk of dying in the hospital, compared with nonhypotensive patients.

At the first hospital, 790 patients were studied: 395 with hypotension and 395 without. At the second hospital, 532 of the 7,679 patients studied had hypotension. At hospital 1, 26% of hypotensive patients died while in the hospital, versus 8% of nonhypotensive patients. At hospital 2, 32% of hypotensive patients died, versus 11% of nonhypotensive patients. The mortality rate sharply increased at a systolic blood pressure threshold of less than 90 mm Hg at hospital 1 and less than 100 mm Hg at hospital 2. The more severe and sustained the hypotension, say the researchers, the higher the in-hospital mortality. And the effect of hypotension on mortality wasn't just a phenomenon observed in elderly patients—it was consistent across all age groups.

The researchers suggest that their data could be used to help stratify risk in critically ill nontrauma patients, and they call for the development of specific diagnostic algorithms for systematically evaluating hypotensive patients in the emergency department.

Source: *Ann Emerg Med*. 2004; 43:106–113.

GERONTOLOGY

Total Knee Arthroplasty: OK for Octogenarians?

Just because a patient is 80 or over doesn't mean total knee arthroplasty (TKA) is out of the question, say researchers from Guys and St. Thomas' Hospitals, London; the Royal National Orthopaedic Hospital, Stanmore; and Derbyshire Royal Infirmary, Derby, all in the United Kingdom. They found that compared to a group of younger patients, most of their patients over age 80 had similarly good outcomes after such surgery—and had a better attitude about the outcome.

The researchers monitored the progress of two groups—65 patients aged 80 or older and 65 patients between the ages of 60 and 70—for periods ranging from 13 months to 8.5 years. Their investigation was based on telephone interviews, written questionnaires, and clinical and radiographic review appointments. Of the older patients, 12 died and one was lost to follow-up. Of the younger group, six died and two were lost to follow-up. None died from causes related to surgery.

On the Knee Society function score, older patients improved from a mean preoperative score of 35 to a mean postoperative score of 78. Similarly, the younger patients' mean function score jumped from 20 to 81. Knee Society knee scores improved from 28 to 89 in the older group and from 23 to 79 in the younger one. The researchers

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found no statistically significant differences between the two groups preoperatively or at five years. One knee in the older group and two knees in the younger group required revision surgery between three and seven years later.

For the most part, postoperative complications were similar. Octogenarians more frequently reported that they felt confused and disoriented after surgery, and all who were admitted on the day of surgery said they felt rushed. Ten male patients in the older group and five patients in the younger group (two women and three men) had postoperative urinary retention. Based on these findings, the researchers recommend catheterizing elderly male patients before the TKA.

All octogenarians returned to at least the same level of independence they had enjoyed prior to surgery, though five years later many were entering nursing homes. This reduced independence, the researchers say, wasn't related to their arthritic conditions.

The main difference between the two groups was their reaction to the surgery. The older patients overwhelmingly rated their TKA as good. Half of the younger patients, on the other hand, weren't satisfied with some aspect of their prosthesis, say the researchers, even when they rated it as good to excellent. The younger respondents reported that their expectations had been set too high, that their pain wasn't relieved entirely, and that the inability to kneel caused problems. They also were dissatisfied more often with waiting times, nursing care, physicians, and physiotherapists.

Source: *Orthopedics.* 2004;27: 37–39.

PREVENTIVE MEDICINE

Smoking and Crohn's Disease: More Reasons to Quit

It's clear from previous studies that smoking is a risk factor for exacerbating Crohn's disease (CD). While urging your patients with CD to stop smoking makes sense for many reasons, researchers from

Stanford University School of Medicine, Stanford, CA; the University of Birmingham, Birmingham, United Kingdom; and Yokkaichi Social Insurance Hospital, Mai, Japan have further statistics to back those reasons up. They examined the impact of smoking, quitting smoking, and other factors on reoperation for recurrent CD.

The researchers distributed a survey to 584 patients who had undergone surgery for ileocecal CD and had at least two years of follow-up. Of the 267 (46%) who responded, 128 were smokers at the time of their first operation for ileocecal CD. Within this group, 21 quit before follow-up or before their first reoperation, 34 quit during the period in which they were at risk for a second reoperation, and 37 quit during the period in which they were at risk for a third reoperation.

According to the survey results, smoking had a statistically significant impact on reoperation rates. Patients who actively smoked were not only more likely to need a reoperation for recurrent disease but also to have more than one reoperation. And while the researchers didn't find a statistically significant difference between smokers and nonsmokers with regard to disease-free interval for recurrent ileocecal CD, quitting smoking dramatically affected reoperation rates: Quitting both reduced the risk of reoperation for recurrent CD at any site and increased the disease-free interval from seven to 17 years.

Based on their results, the researchers call for more patient education and smoking cessation programs, which they believe have the potential to lower the incidence of both CD exacerbation and subsequent reoperation.

Source: *Am J Surg.* 2004;187: 219–225.

ONCOLOGY

Don't Neglect this Prostate Cancer Test

Digital rectal examination (DRE) is an important component in detecting prostate cancer, but it just isn't being performed frequently enough, say a team of researchers from Albany Medical College and the Samuel S. Stratton VA Medical Center, both in Albany, NY. They reviewed outpatient records of 588 veterans and found that DRE wasn't performed in 312 (53%). What's more, it wasn't performed in 276 of 519 patients (53%) who had a prostate-specific antigen (PSA) level less than 4 ng/mL.

Female health care providers were more likely than male providers to

perform the test, and physician assistants were more likely than physicians to do it.

The researchers say prostate cancer is diagnosed in 3% to 5% of the screened population by combining DRE, PSA testing, and transrectal ultrasound. Although screening for prostate cancer is controversial, these researchers argue that if it's going to be done, it should be performed in such a way as to maximize its usefulness, in accordance with all current clinical evidence.

They estimate that, of the roughly 25 million men in the United States who are eligible for screening, 20 million (80%) would have a PSA value less than 4 ng/mL. Assuming a cancer detection rate of 3% with combined DRE and PSA testing, they would expect 600,000 cancers to be diagnosed through the use of these tests. If 10% of these were detected by DRE alone, DRE would be responsible for the detection of 60,000 cancers. If the 50% nonperformance rate found in their study reflects national practice, they contend, at least 30,000 current cancers will be missed. They believe the number of undiagnosed cancers is even higher, though, since many eligible men aren't screened.

Source: *Arch Intern Med*. 2004; 164:313–316.

INTENSIVE CARE

Is Acute Lung Injury Affected by Weight?

Obesity is associated with many health risks, but it doesn't seem to compromise the recovery of mechanically ventilated patients with acute lung injury. On an intention-to-treat basis, researchers from the University of Colorado Health Sciences Center, Denver performed a secondary analysis of data from 902 patients enrolled in therapy trials for acute lung injury at 10 U.S. hospitals. They found that obese, overweight, and lean patients had similar mortality and ventilation outcomes.

Factors associated with poorer outcomes included advanced age, high illness scores, and elevated pre-enrollment peak airway pressure. Patients whose acute lung injury was the result of trauma had better outcomes than the rest of the group.

The researchers note that obese patients often have comorbidities (such as cardiovascular disease and diabetes) that can have an effect on the outcome of acute illnesses. They add, however, that few studies have analyzed the effects of obesity in critical illness.

Initially, the investigators expected to find that the cardiopulmonary changes and comorbidities that accompany excess weight would make it difficult for obese patients to compensate for the stress of acute lung injury. Given their findings, however, they now speculate that the specific care provided to the obese patients in this study may have compensated for abnormalities associated with obesity. For example, if sleep apnea was more common in the obese patients, bypassing the endotracheal intubation may have masked its influence on outcome.

Another finding of clinical significance, say the researchers, is that the benefit of ventilation with a lower tidal volume (for example, 6 mL/kg of predicted body weight) in patients with acute lung injury appears to be comparable, regardless of body weight. At the time of study entry, the obese patients in this study had significantly higher tidal volumes than did those with normal body mass index, suggesting that clinicians may have overestimated the lung size in obese patients and chosen inappropriately high tidal volumes, putting overweight and obese patients at elevated risk for ventilator-associated lung injury. The lack of effect of excess weight on outcome in this study, they add, may have been due to the standardization of tidal volume based on predicted body weight.

Source: *Ann Intern Med.* 2004; 140:338–345.

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PULMONARY DISEASE

When Pneumonia Takes its Time

Research has shown that pneumonia often takes longer to resolve in patients over age 50, due in part to the higher prevalence of underlying chronic obstructive pulmonary disease and smoking history. Currently, bronchoscopic evaluation is recommended for unresolved radiographic changes that linger beyond four to eight weeks. But according to researchers from the University at Buffalo School of Medicine and Biomedical Sciences, Buffalo, NY, it's better to wait 12 to 14 weeks before considering pneumonia in elders to be nonresolving, taking into account the burden of the patient's other illnesses as well as the extent of lobar disease.

They conducted a prospective study of 74 patients aged 70 or older who were admitted to a hospital for community-acquired bacterial pneumonia. Slightly more than one third of the 64 patients who completed the study had total radiographic clearance by three weeks, and 76% had complete clearance at the end of the study period, but eight patients had persistent abnormalities at 12 weeks. Radiographic resolution was significantly lower in patients with three or more comorbid conditions, bacteremia, multilobar involvement, and enteric gram-negative bacilli pneumonias. Comorbidities and disease in more than one lobe were independently predictive of slower resolution.

The researchers say they are unaware of any other study that has looked at the effect of comorbidities on radiographic resolution of pneumonia. They suggest that these results be used to provide a time frame for providers to investigate the causes of delayed radiographic resolution in elders with community-acquired bacterial pneumonia. ●

Source: *J Am Geriatr Soc*. 2004;52:224–229.