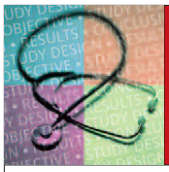

ABSTRACTS IN URGENT CARE

- Effect of Adrenaline on Survival in Out-of-hospital Cardiac Arrest
- Admission Decisions for Patients with CAP Have High Variability Among Physicians
- Perforation Rate in Pediatric Appendicitis
- GSC Score <15 Poses Higher Risk to Elder Patients
- Ruling Out UTIs in Bacterial Infection in Bronchiolitis

NAHUM KOVALSKI, BSc, MDCM

Each month, Dr. Nahum Kovalski reviews a handful of abstracts from, or relevant to, urgent care practices and practitioners. For the full reports, go to the source cited under each title.

Effect of Adrenaline on Survival in Out-of-hospital Cardiac Arrest

Key point: Adrenaline improves chance of return of spontaneous circulation but not survival to discharge.

Citation: Jacobs IG, Finn JC, Jelinek GA, et al. Effect of adrenaline on survival in out-of-hospital cardiac arrest: A randomised double-blind placebo-controlled trial. *Resuscitation*. 2011;82(9):1138-1143.

Adrenaline has been used to treat patients with cardiac arrest for more than half a century but has not been evaluated in a placebo-controlled clinical trial in humans. Indeed, there is concern that it might have untoward effects on myocardial function and cerebral microcirculation in post-cardiac arrest patients. In the first randomized, double-blind, placebo-controlled trial of adrenaline in cardiac-arrest patients, researchers in Australia randomized 534 adults (mean age, 65; 73% men) with out-of-hospital cardiac arrest from any cause to receive 1 mL of either adrenaline 1:1000 (ie, 1 mg) or normal saline every 3 minutes to a maximum of 10 mL. No other resuscitation drugs were given. Paramedics were allowed to use other standard methods of cardiopulmonary resuscitation, including defibrillation.

Rates of survival to hospital discharge—the primary outcome—did not differ significantly between the adrenaline and control groups (4.0% and 1.9%; odds ratio, 2.2). Patients receiving adrenaline had significantly higher likelihood of pre-hospital return of spontaneous circulation (ROSC) than placebo recipients (23.5% vs 8.4%; OR, 3.4) and of admission to the hospital from the emergency department (25.4% vs 13.0%; OR, 2.3).

Published in *J Watch Emerg Med.* October 14, 2011—John A. Marx, MD, FAAEM. ■

Nahum Kovalski is an urgent care practitioner and Assistant Medical Director/CIO at Terem Emergency Medical Centers in Jerusalem, Israel. He also sits on the *JUCM* Editorial Board.

High Variability in Admission Decisions for Patients With Pneumonia

Key point: Admission rates by individual physicians at a single emergency department varied twofold, and variations were not explained by patient, disease, or physician factors.

Citation: Dean NC, Jones JP, Aronsky D, et al. Hospital admission decision for patients with community-acquired pneumonia: variability among physicians in an emergency department. *Ann Emerg Med*. [Epub ahead of print.]

To assess variability among physicians in their decisions to admit patients with community-acquired pneumonia (CAP), researchers conducted a retrospective chart review of 2069 adult patients with diagnoses of CAP who presented to a single emergency department in Salt Lake City during an 11-year period. The decision to admit was adjusted for patient demographics and disease acuity, including vital signs, laboratory and radiographic results, and outcomes. Low acuity was defined as PaO2/FiO2 ratio ≥280 mm Hg, predicted mortality <5% by eCURB (an electronic decision support tool), and <3 minor criteria for severe pneumonia per 2007 Infectious Diseases Society of America/American Thoracic Society guidelines.

Physicians' admission rates ranged from 38%-79%. The individual physician was a highly significant independent predic-

tor of admission after adjustment for patient-specific and disease-specific variables. Individual physicians' admission rates were not associated with patient outcomes. Physician-specific factors, including age, experience, and training, were not associated with variability in physicians' admission rates. Some factors that might have influenced the decision to admit, such as home resources and access to outpatient follow-up, were not recorded.

Published in *J Watch Emerg Med.* October 7, 201—Richard D. Zane, MD, FAAEM. ■

Effect of Delay in Presentation on Rate of Perforation In Children With Appendicitis

Key point: Appendiceal perforation in children is more common than in adults and correlates with duration of symptoms before surgery.

Citation: Narsule CK, Kahle EJ, Kim DS, et al. Effect of delay in presentation on rate of perforation in children with appendicitis. *Am J Emerg Med.* 2011 Oct;29(8):890-993.

Appendicitis is the most common emergency operation in children. The rate of perforation may be related to duration from symptom onset to treatment. A recent adult study suggests that the perforation risk is minimal in the first 36 hours and remains at 5% thereafter. The authors prospectively studied all children older than 3 years who underwent an appendectomy over a 22-month period.

Of 202 patients undergoing appendectomies, 197 had appendicitis. Median age was significantly lower in the perforated group, but temperature and leukocytosis were not. As expected, length of hospital stay was longer in the perforated group (4-13 vs 2-6 days). The incidence of perforation was 10% if symptoms were present for less than 18 hours. This incidence rose in a linear fashion to 44% by 36 hours. Pre-hospital delays were greater in patients with perforated appendicitis. However, in-hospital delay (from presentation to surgery) was less than 5 hours in the perforated group and 9 hours in the non-perforated group.

Appendiceal perforation in children is more common than in adults and correlates directly with duration of symptoms before surgery. Perforation is more common in younger children. Unlike in adults, the risk of perforation within 24 hours of onset is substantial (7.7%), and it increases in a linear fashion with duration of symptoms. In our experience, however, perforation correlates more with pre-hospital delay than with in-hospital delay. ■

GCS Score <15 Represents Greater Risk in Elders Than in Younger Patients

Key point: Any score other than a perfect GCS in patients >70 should be treated as a high-risk case.

Citation: Caterno JM, Raubenolt A, Cudnik MT. Modification of Glasgow Coma Scale criteria for injured elders. *Acad Emerg Med.* 2011;18(10):1014-1021.

Some emergency medical services systems use a Glasgow Coma Scale (GCS) score cutoff of ≤13 to prompt transport of injured patients to trauma centers. To determine the correlation between GCS scores and outcomes by patient age (16–69 vs ≥70), researchers reviewed data from the Ohio Trauma Registry for 52,412 patients who were injured between 2002 and 2007. Outcome measures included in-hospital mortality, clinically significant brain injury, neurosurgical intervention, and emergency intubation.

Elders with GCS scores of 14 had significantly higher risk for in-hospital mortality or traumatic brain injury than younger patients with GCS scores of 13 (odds ratios, 4.68 and 1.84, respectively). Among elders, but not among younger patients, mortality risk was higher in those with GCS scores of 14 than in those with scores of 15 (OR, 1.40) and in those with scores of 13 than in those with scores of 14 (OR, 2.34).

Comment: Trauma systems should consider revising destination criteria to include trauma center transport for elders with acute head trauma and GCS scores <15.

Published in *J Watch Emerg Med*. October 14, 2011—Diane M. Birnbaumer, MD, FACEP. ■

Occult Serious Bacterial Infection in Infants Younger Than 60 to 90 Days With Bronchiolitis

Key point: UTIs are still sufficiently common in very young children with "classic" bronchiolitis, so as to merit being ruled out.

Citation: Ralston S, Hill V, Waters A. Occult serious bacterial infection in infants younger than 60 to 90 days with bronchiolitis: a systematic review. *Arch Pediatr Adolesc Med.* 2011;165(10):951-956.

The authors performed a systematic search of the Medline database for studies reporting rates of serious bacterial infection in infants younger than 90 days with clinical bronchiolitis and/or respiratory syncytial virus infection.

The weighted rate of urinary tract infections in the youngest infants in the 11 studies analyzed was 3.3%. No case of bacteremia was reported in 8 of 11 studies. No case of meningitis was reported in any of the studies. Summary statistics for meningitis and bacteremia are not provided because of an excess of zero events in these samples.

A screening approach to culturing for serious bacterial infections in febrile infants presenting with bronchiolitis or respiratory syncytial virus infection is very low yield. The rate of urine cultures positive for bacteria remains significant, though asymptomatic bacteriuria may confound these results. ■