



ABSTRACTS IN URGENT CARE

- Age-based cutoffs for D-dimer levels
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- Childhood CT scans and cancer
- Cephalosporins in penicillin-allergic patients
- CT scans in older patients with minor head trauma
- Risk factors for death at 30 days in discharged syncope patients
- Lactobacilli vs TMP/SMX to prevent recurrent UTI
- Normal WBC count does not rule out bacteremia
- Antibiotics overprescribed for acute bronchitis

■ 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.

Age-based cutoffs for D-dimer levels

Key point: Age-based cutoffs for D-dimer levels can more accurately rule out deep venous thrombosis than the conventional cutoff level.

Citation: Schouten HJ, Koek HL, Oudega R, et al. *BMJ*. 2012;344:e2985.

Researchers measured D-dimer values in some 650 patients suspected of having deep venous thrombosis but who had a low clinical probability according to their Wells score. Compression ultrasonography was used to confirm the diagnosis.

Various cutoff levels were evaluated:

- The conventional cutoff level (500 g/L) was able to exclude 42.0%;
- A cutoff based on age (age in years x 10 g/L) could exclude 47.8%;
- Using a cutoff of 750 g/L in those aged 60 and older could exclude 47.4%; and
- False-negatives were roughly 0.3% in all approaches.

The age-related cutoffs proved more efficient with increasing age, reaching about 45% (versus 30% with the conventional cutoff) in those between 70 and 80.

The authors call for further validation before advocating widespread clinical use. ■



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.

WHO Calls for ‘Urgent Action’ to Stop Spread of Drug-Resistant Gonorrhea

Key point: Drug-resistant Gonorrhea is spreading and requires aggressive identification and treatment protocols.

Citation: http://www.who.int/mediacentre/news/notes/2012/gonorrhoea_20120606/en/index.html

The World Health Organization (WHO) is calling for “urgent action” to limit the spread and impact of drug-resistant *Neisseria gonorrhoeae* infection, citing reports of emerging resistance to cephalosporin antibiotics — the last-line treatment in gonococcal infection.

The WHO’s action plan emphasizes the following points:

- The importance of prompt diagnosis and treatment, ideally with single-dose therapy to ensure adherence, treatment of partners (patients may deliver treatment to their partners) education and prevention, with special attention to high-risk groups such as sex workers and men who have sex with men, and better surveillance and reporting of drug-resistant cases.

The document also includes flow charts on how to manage cephalosporin treatment failure in both symptomatic and asymptomatic patients. ■

Radiation from Childhood CT Scans Increases Risks of Leukemias, Brain Tumors

Key point: Childhood CT scans carry a distinct — if very small — risk for leukemias and brain tumors.

Citation: Pearce MS, Salotti JA, McHugh K, et al. Radiation ex-

posure from CT scans in childhood and subsequent risk of leukaemia and brain tumours: a retrospective cohort study. *Lancet*. Doi:10.1016/S0140-6736(12)60815-0

Researchers used national radiology and healthcare databases in Great Britain to track the correlation between estimated radiation dosages from computed tomography (CT) and incidence of leukemia or brain tumors during a follow-up of about 10 years. The cohort included some 180,000 patients without previous malignant disease.

The authors estimate that the radiation dosage from two to three head CTs in children younger than age 15 could triple the risk of brain tumors. Five to 10 CTs would result in a similar increase in risk of leukemia.

Noting that the absolute risk is small (one excess leukemia and one excess brain tumor per 10,000 head CTs before age 10), both the authors and a commentator nonetheless urge clinicians to have solid justification for every scan performed. ■

The Use of Cephalosporins in Penicillin-allergic Patients

Key point: For penicillin-allergic patients, the use of third- or fourth-generation cephalosporins or cephalosporins with dissimilar side chains than the offending penicillin carries a negligible risk of cross allergy.

Citation: Campagna JD, Bond MC, Schabelman e, Hayes BD. The use of cephalosporins in penicillin-allergic patients. *J Emerg Med*. 2012;42(5):612-620.

The practice of avoiding cephalosporin administration to penicillin-allergic patients persists despite the low rate of cross-reactions between both groups of antibiotics. The purpose of this literature review is to evaluate the published evidence regarding the commonly held belief that patients with a history of an allergic reaction to penicillin have a significantly increased risk of an allergic reaction to cephalosporins.

Penicillins have a cross-allergy with first-generation cephalosporins (odds ratio 4.8; confidence interval 3.7–6.2) and a negligible cross-allergy with second-generation cephalosporins (odds ratio 1.1; CI 0.6–2.1). Laboratory and cohort studies confirm that the R1 side chain is responsible for this cross-reactivity. Overall cross-reactivity between penicillins and cephalosporins is lower than previously reported, though there is a strong association between amoxicillin and ampicillin with first- and second-generation cephalosporins that share a similar R1 side chain.

Although a myth persists that approximately 10% of patients with a history of penicillin allergy will have an allergic reaction if given a cephalosporin, the overall cross-reactivity rate is approximately 1% when using first-generation cephalosporins or cephalosporins with similar R1 side chains.

However, a single study reported the prevalence of cross-reactivity with cefadroxil as high as 27%. For penicillin-allergic patients, the use of third- or fourth-generation cephalosporins or cephalosporins with dissimilar side chains than the offending penicillin carries a negligible risk of cross allergy. ■

High Rate of Positive CT Scans in Older Patients with Minor Head Trauma

Key point: Head computed tomography was positive in two-thirds of patients aged >65 with Glasgow Coma Scale scores of 15 and no loss of consciousness.

Citation: Moore MM, Pasquale MD, Badellino M. Impact of age and anticoagulation: Need for neurosurgical intervention in trauma patients with mild traumatic brain injury. *J Trauma*. 2012;73(1):126-130.

Whether to perform head computed tomography (CT) on patients with minor traumatic brain injury (TBI) remains a dilemma. This study assessed whether age and use of anticoagulant or antiplatelet therapy is associated with need for neurosurgical intervention in such patients. Researchers retrospectively reviewed charts of all patients aged >14 years who were admitted to a level I trauma center in Pennsylvania with Glasgow Coma Scale (GCS) scores of 14 or 15 and underwent neurosurgery from 2007 through 2009.

Of 7,678 patients who presented with GCS scores >13, 101 (1.3%) underwent surgery. Rates of neurosurgical intervention were significantly higher in patients aged ≥65 than in younger patients (3.3% vs. 0.6%), as was mortality (15% vs. 0.02%). All 10 patients aged ≥65 who died were taking anticoagulants. Neurosurgical interventions included trephination or Burr hole placement, craniotomy or craniectomy, and ventriculostomy catheter placement. was positive in 66% of 65 patients aged ≥65 who presented with GCS score of 15 and no history of loss of consciousness. Mortality was higher in patients on anticoagulant or antiplatelet therapy (warfarin, aspirin, clopidogrel, or a combination) than in those not on such therapy (24% vs. 1%). Among 5 patients (13%) in the younger group and 36 (55%) in the older group who were taking anticoagulants or antiplatelets (warfarin, aspirin, clopidogrel, or a combination), mortality was 0% and 28%.

Published in *J Watch Emerg Med*. June 15, 2012 — Kristi L. Koenig, MD, FACEP. ■

Risk Factors for Death at 30 Days in Discharged Syncope Patients

Key point: Age ≥80 and history of congestive heart failure were strongly associated with short-term death.

Citation: Derosé SF, Gabayan GZ, Chiu VY, Sun BC. Patterns and preexisting risk factors of 30-day mortality after a pri-

mary discharge diagnosis of syncope or near syncope. *Acad Emerg Med.* 2012;19(5):488-496.

To determine risk factors for short-term death in patients discharged from the emergency department (ED) with syncope, researchers reviewed data from Kaiser Permanente Southern California during a 5-year period. Of 22,189 patients with primary ED discharge diagnoses of syncope or near syncope, 321 died within 30 days.

In regression analysis, increasing age was strongly associated with risk of death; hazard ratios were 6.59 for ages 60 to 79 and 11.73 for age ≥ 80 , compared with ages 18 to 59. History of congestive heart failure was also associated with increased risk, and the association varied with age; hazard ratios were 14.30 for ages 18 to 59, 3.09 for ages 60 to 79, and 2.34 for age ≥ 80 . Male sex, recent visit for syncope or near syncope, and history of diabetes, seizure, or dementia were all associated with slightly increased risk for death (HRs ranging from 1.36 to 1.86).

Published in *J Watch Emerg Med.* June 22, 2012 — Diane M. Birnbaumer, MD, FACEP. ■

Lactobacilli vs. TMP/SMX to Prevent Recurrent Urinary Tract Infections

Key point: Effectiveness was similar to trimethoprim-sulfamethoxazole, and Lactobacilli did not cause antibiotic resistance.

Citation: Beerepoot MJ, ter Riet G, Nys S, et al. Lactobacilli vs antibiotics to prevent urinary tract infections: A randomized, double-blind, noninferiority trial in postmenopausal women. *Arch Intern Med.* 2012;172(9):704-712.

Lactobacilli use can restore normal vaginal flora and thwart colonization by pathogenic bacteria. To assess its value in preventing urinary tract infections (UTIs), Dutch researchers conducted a randomized placebo-controlled trial that involved 252 postmenopausal women with histories of at least three symptomatic UTIs in the previous year; the women received either nightly trimethoprim-sulfamethoxazole (TMP-SMX; 80 mg/400 mg) or standard doses of *Lactobacillus rhamnosus* GR-1 and *L. reuteri* RC-14 twice daily.

During the next 12 months, the mean numbers of symptomatic UTIs were 2.9 in the TMP-SMX group and 3.3 in the *Lactobacilli* group (compared with roughly 7 UTIs in the preceding year for both groups); the difference was not statistically significant, but *Lactobacilli* treatment did not meet prespecified criteria for noninferiority. After the first month of treatment, TMP-SMX resistance rose from about 20% to 80% in the antibiotic group and climbed to 100% by the end of the study. On sensitivity testing, bacterial isolates in the TMP-SMX group also showed increased resistance to amoxicillin. No increase in resistance to any antibiotic was noted in the *Lactobacilli* group. Adverse events were similar between groups.

Published in *J Watch Gen Med.* May 22, 2012 — Thomas L. Schwenk, MD. ■

Normal White Blood Cell Count Does Not Rule Out Bacteremia

Key point: Of 289 patients with bacteremia, 52% had normal WBC count and 17% had neither WBC elevation nor fever.

Citation: Seigel TA, Cocchi MN, Saliccioli J, et al. Inadequacy of temperature and white blood cell count in predicting bacteremia in patients with suspected infection. *J Emerg Med.* 2012;42(3): 254-259.

Despite multiple studies showing that a normal white blood cell (WBC) count does not exclude serious disease, physicians in all specialties continue to behave as if it did. To assess whether a normal WBC count or absence of fever reliably excludes bacteremia in patients with suspected infection, investigators conducted a secondary analysis of data from a prospective study of 3563 adults who had blood cultures at a single emergency department.

Among 289 patients (8%) with positive blood cultures, 77% had fever and 48% had elevated WBC count on initial measurement. Neither fever nor an elevated WBC count was noted in 17% of bacteremic patients.

Published in *J Watch Emerg Med.* May 11, 2012 — Daniel J. Pallin, MD, MPH. ■

Antibiotics Are Overprescribed for Acute Bronchitis

Key point: Antibiotics were prescribed to too many patients and bronchodilators to too few at two emergency departments in San Diego.

Citation: Kroening-Roche JC, Soroudi A, Castillo EM, Vilke GM. Antibiotic and bronchodilator prescribing for acute bronchitis in the emergency department. *J Emerg Med.* 2012; published online 20 February 2012.

There is ample evidence that acute bronchitis should not be treated with antibiotics, except in patients with pertussis or significant underlying pulmonary disease. Investigators conducted a chart review to characterize acute bronchitis treatment at two academic emergency departments in 2008. Of 836 patients with a diagnosis of acute bronchitis, 74% were prescribed antibiotics. Antibiotics were prescribed to 87% of patients with HIV, AIDS, or other immunosuppression; 81% with COPD; 76% with asthma; 77% with diabetes; 74% with more than one comorbid condition; and 72% with no comorbid condition noted. Among patients without asthma, 50% were prescribed a bronchodilator.

Published in *J Watch Emerg Med.* May 11, 2012 — Daniel J. Pallin, MD, MPH. ■