ABSTRACTS IN URGENT CARE

- OTC pain relievers and burn risk
- Group A strep guidelines
- IOM report on healthcare spending
- Acellular pertussis vaccine
- Preventing falls in the elderly
- Physicians and unfit drivers
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- Syncope and structural heart disease
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- *E. coli* and HUS

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.

OTC Topical Pain Relievers Pose Burn Risk

***Key point:** Over-the-counter topical muscle and joint pain relievers containing capsaicin, methyl salicylate, or menthol (e.g., Bengay, Icy Hot) may cause serious chemical burns.*

Citation: http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm319353.htm

A review of two adverse drug event databases, as well as the medical literature, found 43 reports of burns linked to these products. Those containing menthol were the most likely to cause second- and third-degree burns.

The FDA advises clinicians to warn patients about the burn risk and to provide guidance on using the products appropriately. In particular, the pain relievers should not be applied to broken or damaged skin; the area should not be bandaged tightly; and heating pads should not be used. ■

Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America

***Key point:** The Infectious Diseases Society of America has updated its 2002 guidelines for diagnosing and treating group A streptococcal (GAS) pharyngitis.*

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.

Citation: Shulman ST, Bisno AL, Clegg HW, et al. Clinical practice guidelines for the diagnosis and management of Group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clin Infect Dis.* (2012) doi: 10.1093/cid/cis629

Among the recommendations, published in *Clinical Infectious Diseases*:

- Rapid antigen detection tests and/or throat culture should be performed to diagnose GAS pharyngitis. Negative antigen tests should be followed up with throat cultures in children and adolescents, but not adults. (The incidence of strep in adults is low, as are risks for complications, such as rheumatic fever.)
- In patients with viral symptoms (e.g., cough, oral ulcers, rhinorrhea), testing for GAS pharyngitis is usually not recommended.
- Testing is not necessary in children under age 3 years unless they have an older sibling with GAS infection or other risk factors.
- Ten days of penicillin or amoxicillin is recommended for nonallergic patients.
- Patients with penicillin allergies may take a 10-day course of a first-generation cephalosporin, clindamycin, clarithromycin, or 5 days of azithromycin. ■

IOM: One Third of Healthcare Dollars Wasted

***Key point:** Roughly one third of the money spent on U.S. healthcare in 2009 — about $750 billion — didn't improve patients' health.*

Citation: http://www.iom.edu/Reports/2012/Best-Care-at-Lower-Cost-The-Path-to-Continuously-Learning-Health-Care-in-America.aspx

The report, *Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*, outlined six categories of waste — unnecessary services, inefficient delivery of care, unnecessary administrative costs, inflated prices, missed opportunities for prevention, and fraud.

Among the group's recommendations to help improve care while reducing cost:

- Decision-support tools and knowledge management systems at point of care should be an integral part of the healthcare system.
- Clinicians should use digital systems to capture patient care experiences.
- Patients and caregivers should be encouraged to partner with clinicians in making healthcare decisions.
- Clinicians should partner with community-based organizations and public health agencies to coordinate interventions to improve health, including use of Web-based tools.
- The payment system should be reformed to reward quality care.

Protection From Acellular Pertussis Vaccine Wanes After 5 Years

Key point: Risk for pertussis increased 42% each year after the fifth dose of DTaP.

Citation: Klein NP, Bartlett J, Rowhani-Rahbar A, Fireman B, Baxter R.
Waning protection after fifth dose of acellular pertussis vaccine in children. *N Engl J Med*. 2012;367(11):1012-1019.

In 2010, California had a large pertussis outbreak among children, many of whom were fully vaccinated. Investigators examined the duration of protection after a fifth dose of the diphtheria, tetanus, and acellular pertussis vaccine (DTaP; given between ages 47 and 84 months) in a case-control study of Kaiser Permanente Northern California members who had polymerase-chain-reaction (PCR) pertussis tests between 2006 and 2011. The researchers compared 277 children (age range, 4–12 years) who were PCR positive for pertussis, 3318 PCR-negative children with a cough illness, and 6068 matched controls.

Older children had a higher percentage of pertussis cases than younger children (range, 4.5% in 6-year-olds to 18.5% in 10-year-olds). Children with pertussis had a significantly longer time since the fifth DTaP dose and received that dose earlier than controls. The risk for pertussis increased 42% each year after the fifth dose of DTaP.

Published in *J Watch Ped Adol Med*. September 12, 2012 — Peggy Sue Weintrub, MD. ■

Exercise and Home Safety Interventions Prevent Falls in Older Adults

Key point: Group and home-based exercise programs, as well as home safety interventions, help prevent falls among community-dwelling older adults.

Citation: Gillespie LD, Robertson MC, Gillespie WJ, et al. *Cochrane Collaboration*. DOI: 10.1002/14651858.CD007146.pub3

In an update of its 2009 review, the group assessed 159 randomized trials of fall prevention interventions with nearly 80,000 participants aged 60 and older.

Among the other interventions that helped reduce the rate of falls or risk for falls:

- Multifactorial interventions, including individualized risk assessment
- Tai chi
- Pacemakers, in patients with carotid sinus hypersensitivity
- First eye cataract surgery in women
- Gradual withdrawal of psychotropic drugs
- Changes in prescribing behavior by primary care physicians
- An anti-slip shoe device in icy conditions

Some of the interventions that did not have an effect include:

- Vitamin D supplementation in people with normal vitamin D levels
- Patient education alone
- Cognitive-behavioral therapy

Telling Dad to Get Off the Road

Key point: A program mandating that physicians warn and report problematic drivers almost halved the accident rate.

Citation: Redelmeier DA, Yarnell CJ, Thiruchelvam D, Tibshirani RJ. Physicians' warnings for unfit drivers and the risk of trauma from road crashes. *N Engl J Med* 2012;367(13):1228-1236.

Physicians often dread the "Dad is too old to drive" conversation, which forces them to weigh public safety against the interests of an individual patient. Studies have been equivocal as to whether these conversations actually make a difference in accident rates.

In Ontario, Canada, doctors are mandated to confront patients whom they judge to be potentially unfit drivers and to report such patients to authorities. Depending on the particulars of a case, the patient's driver's license might or might not be revoked immediately.

Researchers evaluated the policy's effectiveness by comparing patients' accident rates before and after physicians got involved. From 2006 to 2009, most of the 100,000 patients who

received physicians' formal warnings against driving were suffering from such common medical conditions as syncope (26%), diabetes (18%), and dementia (14%); epilepsy accounted for 10%. Compared with baseline accident rates among patients during the 3 years before their warnings, rates following warnings fell by about 45% in the next year. This decline was consistent among all age groups and all diagnostic groups; the decline in accident rates among patients older than 75 was particularly high (66%).

Patients' visits to physicians responsible for issuing warnings fell by about 25% in the year following warnings; 10% of patients who had made at least two visits in the previous year did not visit those physicians at all. Total rates of all visits to all physicians did not change appreciably, but emergency room visits for depression increased by about 25%.

Published in *J Watch Gen Med*. September 27, 2012 — Abigail Zuger, MD. ■

The Key to Longevity After Age 75?

Key point: Don't smoke, have rich social interactions, and engage in leisure activities.

Citation: Rizzuto D, Orsini N, Qiu C, Wang HX, Fratiglioni L. Lifestyle, social factors, and survival after age 75: Population based study. *BMJ*. 2012 Aug 29;345:e5568. doi: 10.1136/bmj.e5568.

In very few studies have researchers examined the association between modifiable risk factors (e.g., smoking, alcohol consumption, and weight) and longevity in elders. Swedish investigators identified and examined these associations in a prospective, population-based, cohort study of more than 1800 older people (age, >75) who were followed for 18 years; half the participants lived beyond age 90.

In age-adjusted analyses, the median age at death was 1.1 years higher for normal-weight versus underweight participants; 1.3 years higher for never smokers versus current smokers; 1.3 years higher for alcohol drinkers versus never drinkers; 1.6 years higher for participants with rich social networks versus those with limited or poor networks; and 1.0 to 2.3 years higher for participants who engaged in mental, social, physical, and productive leisure activities versus those who did not. Multivariate analyses affirmed the salutary effects of not smoking and of social, physical, and productive (e.g., gardening, sewing, volunteer work) leisure activities. The median survival of participants with low-risk profiles (i.e., healthy behaviors, rich social network, and participation in leisure activities) was 5.4 years longer than that of participants with high-risk profiles. These associations were present in men and women, the oldest age group (>85), and those with chronic diseases.

Published in *J Watch Gen Med*. September 27, 2012 — Paul S. Mueller, MD, MPH, FACP. ■

Imaging in Acute Cholecystitis

Key point: Cholescintigraphy is more accurate in diagnosing cholecystitis, but ultrasound is more readily available. However, sensitivity and specificity of US should be considered only approximations, given the varying criteria for positive tests! Accuracy of CT for acute cholecystitis has NOT been studied adequately.

Citation: Kiewiet JJS, Leewenburgh MMN, Bipat S, et al. A systematic review and meta-analysis of diagnostic performance of imaging in acute cholecystitis. *Radiology*. 2012;264: 708-720.

Ultrasound (US) and cholescintigraphy (e.g., hepatobiliary iminodiacetic acid [HIDA] scanning) are used widely to evaluate patients with suspected acute cholecystitis. Additionally, emergency department clinicians sometimes order computed tomography (CT) as the initial test, especially when they are considering both biliary and nonbiliary causes of abdominal pain.

To address the diagnostic accuracy of imaging tests for acute cholecystitis, researchers performed a meta-analysis of 57 studies with explicitly stated criteria for positive tests and with surgery and clinical follow-up as reference standards. Cholescintigraphy was evaluated in 40 studies, and US was evaluated in 26 studies; CT and magnetic resonance imaging were evaluated in only 1 and 3 studies, respectively. For cholescintigraphy, sensitivity was 96% and specificity was 90%; nonvisualization of the gallbladder was the usual criterion for a positive test. For US, sensitivity was 81% and specificity was 83%; criteria for a positive test varied widely, from simple presence of gallstones to combinations of additional findings (e.g., wall thickening, distention, pericholecystic fluid, sonographic Murphy sign).

Published in *J Watch Gen Med*. September 18, 2012 — Allan S. Brett, MD. ■

Syncope Patients with a Normal ECG Are Unlikely to Have Structural Heart Disease

Key point: No syncope patients admitted with a normal electrocardiogram had any abnormality on transthoracic echocardiogram.

Citation: Anderson KL, Limkakeng A, Damuth E, Chandra A. Cardiac evaluation for structural abnormalities may not be required in patients presenting with syncope and a normal ECG result in an observation unit setting. *Ann Emerg Med*. 2012;60(4):478-484.

Although the differential diagnoses for syncope are myriad, most patients who present with syncope and are evaluated in an emergency department (ED) observation unit are discharged with no diagnosis and no identified cause of the syncopal episode.

In a retrospective chart review of 323 consecutive patients

admitted to a single ED observation unit after a syncopal episode, researchers evaluated the utility of structural evaluation of the heart by echocardiography. Overall, 294 patients (91%) underwent echocardiography (transthoracic in 270, stress in 24).

Of 267 patients who presented with normal electrocardiogram (ECG) results, 235 underwent transthoracic echocardiography and none had structural heart disease identified on echocardiogram. One patient had a positive troponin, two patients showed evidence of ischemia on stress echocardiogram, and two patients exhibited transient dysrhythmia while being monitored.

Of 56 patients who presented with abnormal ECGs, 35 underwent transthoracic echocardiography and 7 (20%) were abnormal.

Published in *J Watch Emerg Med.* October 19, 2012 — Richard D. Zane, MD, FAAEM. ■

As Always, Asymptomatic Bacteriuria Is Best Ignored

Key point: A study in healthy young women confirms that treatment for asymptomatic bacteriuria leads to trouble.

Citations: Cai T, Mazzoli S, Mondaini N, et al. The role of asymptomatic bacteriuria in young women with recurrent urinary tract infections: To treat or not to treat? *Clin Infect Dis* 2012 Sep 15; 55(6):771-777. Doi: 10.1093/cid/cis534. Epub 2012 Jun 7 and Wagenlehner FME and Naber KG. Asymptomatic bacteriuria — Shift of paradigm. *Clin Infect Dis.* 2012; 55(6): Sep 15; 55:778-780. Doi: 10.1093/cid/cis541.

Many clinicians treat patients who have asymptomatic bacteriuria (AB), but studies have confirmed that AB treatment provides no benefit in many groups, including older people, diabetic patients, and those with spinal cord injuries. Similar evidence now is provided for healthy young women with recurrent urinary tract infections (UTIs).

Almost 700 sexually active premenopausal women with AB who presented to a single Italian clinic were randomized to receive unblinded treatment or to be followed without treatment. All participants had experienced at least one UTI in the previous year. Those who were treated received oral antibiotics, to which their microbial isolates were confirmed to be sensitive.

After 3 months, 3.5% of untreated women and 8.8% of treated women experienced new symptomatic UTIs. The curves continued to diverge: By 1 year of follow-up, UTI recurrence rates were dramatically higher in the treated group (by our calculations from the data provided, cumulative UTI recurrence rates were 24% in the untreated group and 83% in the treated group). Rates of pyelonephritis were similar between groups.

At the beginning of the study, most bacterial isolates were *Escherichia coli* (39%) or *Enterococcus faecalis* (33%). One year later, urine samples from most recurrence-free patients in the nontreatment group grew *E. faecalis*, whereas most samples from the few treated patients who were recurrence free grew *E. coli*.

Published in *J Watch Gen Med.* October 11, 2012 — Abigail Zuger, MD. ■

New *E. coli* Causes HUS

Key point: Shiga toxin–producing* Escherichia coli *O104:H4 caused the largest outbreak of hemolytic uremic syndrome ever reported.

Citations: Loos S, Ahlenstiel T, Kranz B, et al. An outbreak of Shiga toxin–producing *Escherichia coli* O104:H4 hemolytic uremic syndrome in Germany: Presentation and short-term outcome in children. *Clin Infect Dis.* 2012;55(6):753-759. Doi: 10.1093/cid/cis531 and Tarr PL and Karpman D. *Escherichia coli* O104:H4 and hemolytic uremic syndrome: The analysis begins. *Clin Infect Dis.* 2012;55(6):760-763. Doi: 10.1093/cid/ cis533.

Hemolytic uremic syndrome (HUS) is characterized by hemolytic anemia, thrombocytopenia, and acute renal failure — often together with neurologic deficits. Past outbreaks typically have involved children aged <5 years and have been attributable to gastrointestinal infection by enterohemorrhagic *Escherichia coli* — often type O157:H7. Shiga toxins (Stx) types 1 and 2, produced by these pathogens, play an important role in inducing HUS.

An outbreak of Shiga toxin–producing *Escherichia coli* (STEC) infections began in Germany in the spring of 2011, ultimately resulting in >3800 reported cases; 845 of the patients developed HUS. Uncharacteristically, 88% of the HUS patients were adults. The causative organism — *E. coli* serotype O104:H4 — produces Stx2 and is resistant to all -lactam antibiotics and cephalosporins. Analysis revealed virulence characteristics of both STEC and enteroaggregative *E. coli*.

Among the 90 children with HUS who were studied, the median age was 11.5 years (range, 0.6–17.5); only 20% of the children were aged <5 years. The median duration of the prodromal phase (mild to moderate gastrointestinal symptoms) before HUS onset was 5 days (range, 0–14), and the median duration of hospitalization was 17 days (range, 2–103). Ninety-six percent of the children had diarrhea; 73% had bloody diarrhea. Dialysis was required in 71% of patients for a median duration of 11 days (range, 2–199). Only one patient died. The other children recovered — or are still improving — most of them with supportive care alone.

Published in *J Watch Infect Dis.* October 17, 2012 — Stephen G. Baum, MD. ■