



ABSTRACTS IN URGENT CARE

- Survival after pneumonia
- Speed bumps and appendicitis
- UTIs in men
- Oral anticoagulants and VTE
- Sugar for infant pain
- Pediatric pain and emergency care
- Flucelvax
- Probiotics for diarrhea prophylaxis

■ 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.

Long-term Survival Following Pneumococcal Pneumonia

Key point: *Pneumococcal pneumonia foretold considerably higher 10-year mortality than the expected rate.*

Citation: Sandvall B, Rueda AM, Musher DM. Long-term survival following pneumococcal pneumonia. *Clin Infect Dis.* 2013;56(8):1145-1146.

Before antibiotics, pneumonia was called “the old man’s friend” for carrying the old and infirm to a swift and relatively painless death. Now that short-term survival after pneumonia is the rule, does the disease provide any long-term prognostic information?

Veterans Administration researchers reviewed medical records of 392 patients in whom bacteriologically confirmed pneumococcal pneumonia was diagnosed at a single hospital during 10 years. Almost all patients were men (mean age, 63), and 48 (12%) died within 1 month of diagnosis. Among the remaining patients, the overall 10-year survival rate was <70%, which was substantially lower than the >95% expected rate for 63-year-old American men. When patients were stratified by severity of pneumonia according to a standard scoring system, 10-year mortality significantly increased with increasing severity scores, but even the mildest disease was associated with higher-than-normal long-term mortality. Bacteremic disease was associated with lower 10-year survival than was nonbacteremic disease.



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.

Published in *J Watch General Med* April 16, 2013 — Abigail Zuger, MD ■

Pain Over Speed Bumps in Diagnosis of Acute Appendicitis: Diagnostic Accuracy Study

Key point: *Pain over speed bumps has a negative predictive value of 90%.*

Citation: Ashdown HF, D’Souza ND, Karim D, Stevens RJ, Huang A, Harnden A. Pain over speed bumps in diagnosis of acute appendicitis: diagnostic accuracy study. *BMJ.* 2012;345 doi: <http://dx.doi.org/10.1136/bmj.e8012>

To assess the diagnostic accuracy of pain on travelling over speed bumps for the diagnosis of acute appendicitis, a prospective questionnaire-based diagnostic accuracy study was done in a secondary care surgical assessment unit at a district general hospital in the United Kingdom. One hundred one patients aged 17 to 76 years, referred to the on-call surgical team for assessment of possible appendicitis, participated.

The analysis included 64 participants who had travelled over speed bumps on their journey to hospital. Of these, 34 had a confirmed histological diagnosis of appendicitis, 33 of whom reported increased pain over speed bumps. The sensitivity was 97% (95% confidence interval 85% to 100%), and the specificity was 30% (15% to 49%). The positive predictive value was 61% (47% to 74%), and the negative predictive value was 90% (56% to 100%). The likelihood ratios were 1.4 (1.1 to 1.8) for a positive test result and 0.1 (0.0 to 0.7) for a negative result. Speed bumps had a better sensitivity and negative likelihood ratio than did other clinical features assessed, including migration of pain and rebound tenderness.

Presence of pain while travelling over speed bumps was as-

sociated with an increased likelihood of acute appendicitis. As a diagnostic variable, it compared favorably with other features commonly used in clinical assessment. Asking about speed bumps may contribute to clinical assessment and could be useful in telephone assessment of patients. ■

Two Studies on UTIs in Men

Key point: *Longer Treatment Offers No Advantage in Male UTIs; Routine Pre-Op Urine Cultures Useless.*

Citations: Drekonja DM, Rector TS, Cutting A, Johnson JR. Urinary Tract Infection in Male Veterans Treatment Patterns and Outcomes *Arch Intern Med.* 2012;():1-7. doi:10.1001/2013.jamainternmed.829, and Drekonja DM, Zarbinski BA, Johnson JR. Preoperative Urine Cultures at a Veterans Affairs Medical Center. *Arch Intern Med.* 2012;():1-2. doi:10.1001/2013.jamainternmed.834.

One study followed outcomes in some 33,000 outpatients with urinary tract infections, two thirds of whom received treatment for longer than 7 days. Over 12 months' follow-up, longer therapy (more than 7 days) was not associated with a reduction in early or late recurrence. The risk of *Clostridium difficile* infection was significantly higher with longer therapy.

Another study at a veterans' medical center found that preoperative urinary cultures were ordered inconsistently and were associated with higher rates of surgical-site infection, diarrhea, and *C. difficile*. The presence of bacteriuria, however, was not associated with surgical-site infection.

A commentator recommends "a culture shift in antibiotic prescribing practices for men with bacteriuria from 'more is better' to 'less is more.'" ■

Novel Oral Anticoagulants Are as Effective as Vitamin K Antagonists for Patients with Acute VTE

Key point: *Rivaroxaban was associated with 1/2 the risk of major bleeding.*

Citation: Foix BD, Kahn SR, Langleben D, Eisenberg MJ, Shimony A. Efficacy and safety of novel oral anticoagulants for treatment of acute venous thromboembolism: Direct and adjusted indirect meta-analysis of randomised controlled trials. *BMJ.* 2012;345:e7498.

Novel oral anticoagulants are promising alternatives to vitamin K antagonists for treating patients with acute venous thromboembolism (VTE). In a meta-analysis of nine randomized, controlled trials that involved >16,000 patients, investigators compared the effectiveness of novel oral anticoagulants (factor Xa inhibitors, rivaroxaban [Xarelto] and apixaban, and direct thrombin inhibitors, dabigatran [Pradaxa] and ximelagatran) and conventional oral vitamin K antagonists (e.g., warfarin). Vitamin K antagonists always were preceded by ini-

tial heparin therapy, whereas pretreatment with heparin was variable before the novel agents.

For recurrent acute VTE and all-cause mortality, no significant differences were found among any of the novel anticoagulants or conventional vitamin K antagonists. Rivaroxaban was associated with significantly lower risk for major bleeding (relative risk, 0.57).

Published in *J Watch Gen Med* December 4, 2012 — Paul S. Mueller, MD, MPH, FACP. ■

A Little Sugar and Less Pain

Key point: *A small amount of oral sucrose is widely recommended for routine use during painful procedures in young infants.*

Citation: Harrison D, Beggs S, Stevens B. Sucrose for procedural pain management in infants. *J Watch Pediatr Adolesc Med* 2012;130(5):918-925.

The Prophet Mohammed seemed aware of the calming effect of oral sugar when he started the custom of giving newborns a well-chewed date in 632 AD (<http://www.islamicvoice.com/april.2001/quran.htm>). The first report in the pediatric medical literature documented a significant nonsedating calming effect of oral sucrose in infants (*Pediatrics* 1991 Feb; 87:215). Medical progress moves slowly as the effect of sucrose in infants continues to be studied (*J Watch Pediatr Adolesc Med* Sep 29 2010). A recent review on oral sucrose for procedural pain management examines existing evidence and practice recommendations.

Sucrose is sweeter and more effective than glucose or lactose. Evidence of the calming and analgesic effect of sucrose is limited to infants younger than 12 months. Most studies have examined a 24% sucrose solution in small amounts (0.2–0.5 mL/kg). In a meta-analysis of 44 randomized, controlled trials in infants, oral sucrose reduced behavioral responses to pain (e.g., cry duration and facial actions) and composite pain scores during painful procedures (e.g., heel stick and circumcision) compared with placebo, no treatment, or a less-sweet solution (e.g., breast milk). Administering oral sucrose throughout a painful procedure provides a sustained analgesic effect, and the effect is enhanced when combined with nonnutritive sucking. Evidence is limited on the use of oral sucrose in preterm and sick infants.

The mechanism of the effect of oral sucrose appears to be the release of β -endorphin in response to the sweet substance. This theory is based on evidence that oral sucrose was not effective in infants who were exposed to antenatal methadone (a substance that depresses endogenous opioids).

Recommendations for the use of oral sucrose include the following:

- Use small volumes for painful procedures only.
- Avoid use for calming irritable infants who are not undergoing painful procedures.

- Administer sucrose in small amounts throughout the duration of the procedure.
- Use in combination with other effective strategies (e.g., nonnutritive sucking, breastfeeding).

Published in *J Watch Pediatr Adolesc Med.* December 5, 2012

— Martin T. Stein, MD. ■

Reducing Pediatric Pain and Anxiety During Emergency Care

Key point: Recommendations include pediatric-specific provider education, pain assessment, and new techniques for reducing pain and anxiety.

Citation: Fein JA, Zempsky WT, Cravero JP; Committee on Pediatric Emergency Medicine and Section on Anesthesiology and Pain Medicine; American Academy of Pediatrics. Relief of pain and anxiety in pediatric patients in emergency medical systems. *Pediatrics.* 2012;130(5):e1391-1405.

The American Academy of Pediatrics Committee on Pediatric Emergency Medicine and Section on Anesthesiology and Pain Medicine provide comprehensive recommendations for reducing pediatric pain and anxiety in the emergency department and during out-of-hospital emergency transport. Emphasizing provider education, appropriate pain assessment, and pediatric-specific pain and anxiety-reduction techniques, the authors endorse the following:

- A dedicated child-friendly, calming environment
- Pediatric-specific visual pain scales modified for the developmentally delayed
- A toolbox of pediatric distraction equipment for minimizing anxiety
- Child life specialists to coach and calm children using age-appropriate techniques
- Family presence during painful procedures
- Use of intranasal, mucosal, oral, transdermal, or inhaled analgesia in place of intravenous or intramuscular routes
- Use of vibrating devices applied over cold packs or topical anesthetics to reduce pain associated with necessary needle sticks
- Breastfeeding or giving 12% to 25% oral sucrose solution for infants <6 months undergoing minor procedures
- Topical anesthetics for minor laceration repair, lumbar puncture, and abscess drainage
- Warmed, buffered lidocaine injected slowly with a small-gauge needle for deeper-tissue analgesia
- Tissue adhesives or steri-strips for low-tension wounds
- Absorbable sutures for higher-tension lacerations
- A quality improvement program for reviewing pediatric pain management practices

Published in *J Watch Emerg Med.* December 7, 2012 — Katherine Bakes, MD. ■

Flucelvax

Key point: The FDA has approved a seasonal influenza vaccine manufactured using mammalian cell culture.

Citation: FDA approves first seasonal influenza vaccine manufactured using cell culture technology [press release]. *Silver Spring, MD: U.S. Food and Drug Administration*; Nov 20, 2012. <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm328982.htm>.

On November 20, 2012, the FDA announced the approval of Flucelvax, an inactivated seasonal influenza vaccine indicated for patients aged ≥18 years. The vaccine is produced using cultured animal cells rather than fertilized chicken eggs. Although mammalian cell culture has long been used for production of other vaccines, Flucelvax is the first seasonal influenza vaccine manufactured by this method to be approved in the United States.

In a randomized, placebo-controlled trial involving 7,700 people aged 18 to 49, Flucelvax was 84% effective in preventing influenza. In a separate study involving about 1,700 individuals aged >49, immunogenicity was similar to that of an egg-based vaccine. Safety evaluations revealed injection-site and general reactions typical of current influenza vaccines. The efficacy of Flucelvax compared with other seasonal influenza vaccines has not been evaluated.

Published in *J Watch Infect Dis.* December 12, 2012 — Lynn L. Estes, PharmD. ■

Probiotics Prevent Clostridium difficile–Associated Diarrhea

Key point: In a meta-analysis of 20 randomized, controlled trials, probiotics reduced risk by 66%.

Citation: Johnston BC, Ma SSY, Goldenberg JZ, et al. Probiotics for the prevention of Clostridium difficile–associated diarrhea: A systematic review and meta-analysis. *Ann Intern Med.* 2012;157(12):878-888.

Clostridium difficile–associated diarrhea (CDAD) is increasing in incidence and severity in North America and Europe. Some studies have suggested that probiotics taken in combination with antibiotics can reduce the risk for antibiotic-induced CDAD.

The current meta-analysis identified 20 eligible trials including 3818 patients. The investigators were interested in the protective effect of any probiotic at any dose. Probiotic species included were *Bifidobacterium*, *Lactobacillus*, *Streptococcus*, and *Saccharomyces*. The pooled relative risk for CDAD in patients receiving probiotics was 0.34 (95% confidence interval, 0.24–0.49). Probiotic use was not associated with increased risk for adverse events and was effective in both adults and children. The risk reduction was greater in trials that used multiple species (relative risk, 0.25).

Published in *J Watch Gastro.* December 7, 2012 — Douglas K. Rex, MD. ■