ABSTRACTS IN URGENT CARE

On Patient Satisfaction, Epinephrine and Dexamethasone in Bronchiolitis, the Predictive Value of T-Waves, Acute Otitis Media, Acute Rhinosinusitis, Papaverine for Renal Colic, and Simple Febrile Seizures in Children

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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.

A Short Video About What to Expect in the ED Increases Patient Satisfaction

Key point: Showing the video to patients in the ED waiting room increased their satisfaction with the ED experience.

Citation: Papa L, Seaberg DC, Rees E, et al. Does a waiting room video about what to expect during an emergency department visit improve patient satisfaction? ***CJEM***. 2008;10:347-354.

Assessment of patient satisfaction has become a component of physician and emergency department evaluation.

Investigators at an academic hospital developed a six-minute video that explained what patients could expect during an ED visit, from registration to discharge, and presented information about an outpatient referral line. A single research assistant administered a validated patient satisfaction survey just before discharge to a convenience sample of 551 patients during the two months before the video was introduced, and 581 patients during the two months after. Eligible participants were adult patients or parents of pediatric patients (mean age, 38; 61% were women) who were triaged to the waiting room and were not admitted to the hospital.

Overall patient satisfaction scores (on a five-point Likert scale, ranging from "poor" to "excellent") were significantly higher after the video was introduced than before; 65% vs. 58% rated the visit as "excellent" or "very good." Satisfaction with the perceived amount of time spent in the waiting room did not differ between the two groups.

After adjustment for age, sex, and ED length of stay, satisfaction with perceived waiting room time and viewing the video were the strongest predictors of overall satisfaction.

In addition, calls to the hospital's outpatient clinic referral line increased significantly after the video was introduced (from 1.5 to 4.5 calls per month). The authors note that many patients come to EDs because they are unaware of alternate sources for urgent care.

Many people might not know what to expect during an ED visit, so it makes sense that informing patients about the ED experience would improve satisfaction. A waiting room video is one more tool to add to other interventions (such as decreasing waiting time to see a physician) to help increase patient satisfaction. ■

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A Multicenter Randomized Controlled Trial of Nebulized Epinephrine and Dexamethasone in Outpatients with Bronchiolitis

Key point: Combined therapy with epinephrine and dexamethasone reduced hospital admissions by 30%.

Citation: Plint AC, Johnson DW, Patel H, et al. for Pediatric Emergency Research Canada (PERC). 2008 CAEP/ACMU Scientific Abstracts—Plenary Presentations: 1-4.

Bronchiolitis is the most common disease of the lower respiratory tract in the first year of life. Hospital admissions have al-

most doubled over the last 10 to 15 years in North America. The objective of this study was to determine if the treatment of infants with bronchiolitis presenting to the emergency department with nebulized epinephrine (epi), oral dexamethasone (dex), or both results in a reduction in hospital admissions.

Infants 6 weeks to 12 month old presenting with bronchiolitis to eight Canadian pediatric EDs were enrolled in a double-blind, placebo-controlled two-factor randomized controlled trial. Infants were randomized to treatment with one of four courses:

- epi and dex
- epi plus placebo
- nebulized placebo plus dex
- nebulized placebo plus oral placebo

The primary outcome measure was hospital admission up to seven days after enrollment.

Eight hundred subjects were enrolled. Study groups were similar in age, sex, RSV status, baseline clinical score, length of symptoms, and atopy history.

The epi/dex groups were significantly less likely to be admitted by day 7 than the placebo group, but neither the dex nor epi alone groups showed any significant reduction in admission compared with placebo.

The number needed to treat with epi/dex to prevent one admission within seven days of the initial visit is 11.4. The epi and epi/dex group showed a significant improvement in clinical score and heart rate over the first hour of the study when compared with placebo, while the dex group did not.

In this largest RCT of bronchiolitis treatment, neither dex nor epi alone lowered hospitalization rates, but combined therapy with epinephrine and dexamethasone reduced hospital admissions by 30%. Eleven infants would need to be treated with this combination to prevent one hospitalization. ■

T-Wave Abnormalities Predict Cardiovascular Events in Patients with Chest Pain

Key point: Risk for cardiovascular events at 30 days increased in patients with T-wave abnormalities who did and did not have known coronary artery disease.

Citation: Lin KB, Shofer FS, McCusker C. Predictive value of T-wave abnormalities at the time of emergency department presentation in patients with potential acute coronary syndromes. *Acad Emerg Med*. 2008;15:537-543.

In patients who present with chest pain, ST-segment changes are strongly associated with acute coronary syndromes (ACS) and risk for cardiovascular events. These authors evaluated the association between T-wave changes and risk for adverse cardiovascular events at 30 days in 5,582 patients (age >30) who presented to a single emergency department with a chief complaint of chest pain and had an electrocardiogram ordered in the ED. Investigators reviewed patients' hospital courses and followed up with patients by telephone 30 days after presentation.

Overall, 25% of patients had T-wave abnormalities (flattening or any degree of inversion) on the initial ECG. T-wave changes were associated with increased risk for the composite endpoint of death, myocardial infarction, reperfusion, or diagnostic test results consistent with coronary artery disease (CAD).

The relative risk for the composite endpoint was 1.41 for T-wave flattening, 2.37 for inversions 1 mm to 5 mm, and 3.36 for inversions >5 mm. Risk was increased in patients both with and without known histories of CAD.

Only about 8% of patients with ACS present with normal ECGs, but many others are labeled initially as having only "nonspecific" T-wave changes.

This study's findings suggest that we consider T-wave abnormalities as markers of ischemic heart disease and that the deeper the inversion, the higher the risk

[Published in *J Watch Emerg Med*, July 11, 2008—Diane M. Birnbaumer, MD, FACEP.] ■

Trends in Acute Otitis Media

Key point: The incidences of otitis media, treatment failure, and relapse have declined during the past decade.

Citation: Sox CM, Finkelstein JA, Yin R, et al. Trends in otitis media treatment failure and relapse. *Pediatrics*. 2008;121:674-679.

To assess changes in the incidence of acute otitis media (AOM), investigators retrospectively reviewed nine years of visits for AOM in children ranging in age from 2 months to 12 years old in a multispecialty provider group that served 275,000 pediatric patients.

From 1996 through 2004, incidence of AOM declined significantly, from 385 to 189 visits per 1,000 person-years. Use of high-dose amoxicillin (≥70 mg/kg daily) rose significantly, from 2% of AOM visits in 1996 to 42% in 2004, whereas use of regular-dose amoxicillin and trimethoprim-sulfamethoxazole declined significantly.

Both treatment failure (defined as a second AOM visit associated with a different antibiotic prescription before completion of the first prescription) and relapse rate (a second AOM visit associated with a different prescription within 30 days of the first visit) declined slightly, from 3.9% to 2.6% and from 9.2% to 8.9%, respectively.

Receipt of high-dose amoxicillin did not protect against treatment failure or relapse.

The authors acknowledge that the 50% decline in the incidence of AOM during the past decade likely results from many factors, including new vaccines.

[Published in *J Watch General Med*, April 10, 2008—Howard Bauchner, MD.] ■

Antibiotics in Acute Rhinosinusitis: Often Prescribed, but Rarely Indicated

Key point: No clinical signs or symptoms identified a subgroup of patients who derived benefit from antibiotics.

Citation: Young J, De Sutter A, Merenstein D, et al. Antibiotics for adults with clinically diagnosed acute rhinosinusitis: A meta-analysis of individual patient data. *Lancet*. 2008; 371:908-914.

About a third of patients who present with upper respiratory infections are diagnosed with acute rhinosinusitis, and 80% of patients with this diagnosis receive antibiotics, even though no known criteria distinguish between viral and bacterial etiologies.

To determine whether a subgroup of patients that might derive benefit from antibiotics could be identified, researchers combined and reanalyzed individual patient data from nine clinical trials that involved 2,547 adults with clinical signs and symptoms of rhinosinusitis who were randomized to receive antibiotics or placebo. No patient had undergone imaging or culture before randomization. Cure was assessed after eight to 15 days in all trials.

The odds ratio for cure in the antibiotic group was 1.37. The estimated number needed to treat with antibiotics to achieve one additional cure was 15; the NNT was similar in all trials.

Symptom severity, symptom duration, and age did not predict increased benefit from antibiotic treatment. Patients with purulent pharyngeal discharge derived somewhat greater benefit from antibiotics than did other patients, but the NNT for patients in this group was still 8.

The authors conclude that adults with acute rhinosinusitis generally should not receive antibiotics, regardless of presenting signs and symptoms, and that guidelines that suggest antibiotic therapy after seven days of symptoms are not supported by evidence.

Some clinicians might argue that an NNT of 8 or 15 is sufficient to warrant antibiotic therapy, but any benefits must be weighed against risks for adverse effects and increased antimicrobial resistance. Of course, patients with unusual signs or symptoms (e.g., high fever, periorbital edema) suggesting a serious complication should be treated promptly with antibiotics.

[Published in *J Watch General Med*, April 15, 2008—Bruce Soloway, MD.] ■

Papaverine Hydrochloride, Alone or in Combination, for Short-term Relief of Renal Colic

Key point: Diclofenac provides longer effective analgesia and fewer side effects.

Citation: Snir N, Moskovitz B, Nativ O, et al. Papaverine hydrochloride for the treatment of renal colic: An old drug revisited. A prospective, randomized study. *J Urol*. 2008;179:1411-1414.

The authors assessed the efficacy of papaverine hydrochloride, a commonly used smooth muscle relaxant, for the treatment of renal colic as a single agent and in combination with sodium diclofenac.

A prospective, single-blind clinical study was performed at two centers. A total of 86 patients with acute renal colic were randomized to three treatment groups of 120 mg intravenous papaverine hydrochloride (29), 75 mg intramuscular sodium diclofenac (n=30), and papaverine hydrochloride plus sodium diclofenac (n=27). Pain intensity was assessed with the visual analog scale at 0 minutes, 20 minutes, and 40 minutes after treatment. Further analgesia was given at patient request and consisted of 1 mg/kg intramuscular meperidine.

Pain intensity decreased significantly ($p<0.01$) after 20 minutes and after 40 minutes in all groups. Papaverine hydrochloride was as effective as sodium diclofenac in alleviating pain, and the combined treatment group showed a slight trend of more rapid relief. Significantly more patients in the papaverine group required further analgesia, and four patients (14.8%) reported minor adverse effects (dizziness in three, sleepiness in one).

Papaverine hydrochloride is as effective as sodium diclofenac for the short-term relief of acute renal colic pain and may be advantageous in patients with contraindications for nonsteroidal anti-inflammatory drugs. However, sodium diclofenac appears to provide a longer effective analgesia. ■

Simple Febrile Seizures Don't Raise Death Risk in Children

Key point: Children suffering simple febrile seizures are at no greater mortality risk than other children.

Citation: *The Lancet*. Vestergaard M, Pedersen MG, Ostergaard JR, et al. Death in children with febrile seizures: A population-based cohort study. 2008;372:457-463.

Using national databases, the authors identified some 55,000 children who experienced febrile seizures between 3 months and 5 years of age from a cohort born between 1977 and 2004. The researchers then compared mortality among the seizure group with all other children in the cohort.

Children with simple seizures (i.e., those lasting 15 minutes or less and not recurring within 24 hours) had death rates similar to the unaffected population.

However, children with complex seizures (lasting longer than 15 minutes or recurring within 24 hours) showed increased mortality in the first and second years after seizure. Then their mortality rates returned to background levels.

The authors suggest their findings should reassure parents. One commentator observes that children with complex seizures and underlying neurologic abnormalities "might warrant closer attention and follow-up." ■