



On Injured Skaters, Diverticulitis, Fluticasone vs. Oral Prednisolone, and NT-proBNP

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Each month, Dr. Nahum Kovalski will review 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.

Differences in the Risk Associated with Head Injury for Pediatric Ice Skaters, Roller Skaters, and In-Line Skaters

Citation: Knox CL, Comstock RD, McGeehan, et al. *Pediatrics*. 2006;118:549-554.

URL: <http://pediatrics.aappublications.org/cgi/content/abstract/118/2/549?etoc>



Key point: Ice skating carries a greater risk of head and facial injuries than roller or in-line skating.

The goals were to describe the epidemiologic features of pediatric skating-related injuries sustained from 1993 to 2003 and to compare ice skating-related injuries with roller skating- and in-line skating-related injuries. This analysis of

pediatric skating-related injury data came from the National Electronic Injury Surveillance System of the U.S. Consumer Product Safety Commission.

An estimated 1,235,467 pediatric skating participants presented to hospital emergency departments with injuries between 1993 and 2003. These children had a mean age of 10.9 years (SD: 3.2 years; range: 1–18 years), and half were male. The

most common mechanism of injury was a fall (83.1%). Ice skaters sustained a greater proportion of head injuries (13.3%), compared with roller skaters (4.4%) and in-line skaters (5.0%). Ice skaters also experienced a greater proportion of concussions (4.3%), compared with roller skaters (0.6%) and in-line skaters (0.8%). The proportion of facial injuries was greater among ice skaters than among roller skaters and in-line skaters. The majority of roller skating- and in-line skating-related injuries were upper-extremity fractures (53.9% and 59.7%, respectively). Children ≤ 6 years of age experienced a greater proportion of head and facial injuries than did older children in each skating activity.

Comment: There is a need to continuously reinforce the importance of head and limb protection when children skate. Any patient encounter is an opportunity to review these issues, both with the child and parents. In the case of ice skating, especially in a closed rink, proper protective gear can be enforced. ■

CT and Clinical Features of Acute Diverticulitis in an Urban U.S. Population: Rising Frequency in Young, Obese Adults

Citation: Zaidi E, Daly B. *AJR Am J Roentgenol*. 2006;187:689-694. <http://www.ajronline.org/cgi/content/abstract/187/3/689>

Key point: The increasing prevalence of diverticulitis in younger age groups may be partially related to obesity.

On the basis of our experience in recent years, the authors hypothesized that acute diverticulitis occurs more frequently in young adult patients (age ≤ 50 years) now than previously recognized. The authors reviewed hospital and radiology databases to identify 104 adult patients with both computed



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tomography (CT) and clinical diagnoses of acute diverticulitis.

The study group was composed of 55 men and 49 women (age range, 22-88 years; mean age, 52.2 years; median age, 49.0 years). Fifty-six (53.8%) were 50 years old or younger, and 22 were 40 years old or younger. Forty-one complications were noted in 38 patients (36%).

There was no significant age difference between the 50 and >50-years-old age groups for hospital admission (90 patients, 86.5%), medical therapy (76, 73.1%), or surgery or percutaneous abscess drainage (28, 26.9%). Abdominal obesity was present in 48 (85.7%) and 37 (77%) of the 50 and > 50-years-old age groups, respectively.

To conclude, in this urban population, acute diverticulitis occurred more frequently than previously recognized in patients 20-to-50 years old. This group had significantly greater abdominal obesity than the older group. Severe disease requiring hospital admission, surgery, or percutaneous drainage (or both surgery and percutaneous drainage) was common in all age groups.

Comment: In a 30-year-old with abdominal pain, diverticulitis tends to be low on the differential. But such a patient, especially if obese, may be brewing an acute infection that gets missed due to low clinical suspicion. CT will identify these lesions regardless of age, but if the CT is not ordered, the diagnosis may be missed. Obese patients may show little anterior abdominal findings with any intra-abdominal infection, making the diagnosis more difficult. ■

High-Dose Inhaled Fluticasone Does Not Replace Oral Prednisolone in Children with Mild to Moderate Acute Asthma

Citation: Schuh S, Dick PT, Stephens D, et al. *Pediatrics*. 2006;118:644-650.

URL: <http://pediatrics.aappublications.org/cgi/content/abstract/118/2/644?etoc>



Key point: Oral corticosteroids play an important role in all degrees of asthma.

Inhaled corticosteroids are not as effective as oral corticosteroids in school-aged children with severe acute asthma. It is uncertain how inhaled corticosteroids compare with oral corticosteroids in mild to moderate exacerbations.

This was a randomized, double-blind controlled trial conducted between 2001 and 2004 in a tertiary care pediatric emergency department. The authors studied a convenience sample of 69 previously healthy children 5 to 17 years of age with acute asthma and forced expiratory volume

in one second at 50% to 79% predicted value. Albuterol was given in the emergency department and salmeterol was given after discharge to all patients, as well as either fluticasone or oral prednisolone.

At 240 minutes, the forced expiratory volume in one second increased by 19.1% ± 12.7% in the fluticasone group and 29.8% ± 15.5% in the prednisolone group. At 48 hours, this difference was no longer significant. The relapse rates by 48 hours were 12.5% in the fluticasone group and 0% in the prednisolone group.

Comment: I continue to encounter patients who express extreme fear of any oral dosing of a corticosteroid. Oral steroids remain a critical component of the successful treatment of asthma exacerbations. Clear explanation of the safety and efficacy of a short course of oral steroids is usually sufficient to allay patients' families' fears. ■

Is NT-proBNP a Useful Test to Detect Congestive Heart Failure? It's too early to tell.

[Commentary on "Potential Impact of N-Terminal pro-BNP Testing on the Emergency Department Evaluation of Acute Dyspnea."]

Citation: Koenig KL. *Can J Emerg Med*. 2006;8:251-258. <http://emergency-medicine.jwatch.org/cgi/content/full/2006/804/1>

Key point: There is a great need for a test that distinguishes various causes of dyspnea. NT-proBNP is not powerful enough to make the diagnosis if clinical suspicion of CHF falls in the gray zone.

In a prospective cohort study, researchers assessed the effect of adding NT-proBNP testing to the routine work-up in a convenience sample of adults who presented to a single emergency department with acute dyspnea. Treating physicians, who were blinded to the test results, assessed the likelihood that dyspnea was due to congestive heart failure (CHF).

Complete data were available for 139 visits by 129 patients (median age, 76; 59% admitted). Serum NT-proBNP results were positive in 86% of cases overall, including in 75% of cases considered unlikely to be due to CHF and in 86% of cases for which the physician was unsure about the likelihood of CHF. Overall, NT-proBNP levels were higher in patients considered likely to have CHF, but the ranges of values overlapped considerably among the groups with different physician-assessed likelihoods. The authors conclude that there is high discordance between clinical suspicion of CHF and NT-proBNP values, and that the test is not specific in an unselected population of dyspneic patients.

Comment: Missing CHF as the cause of dyspnea leads to greater morbidity and mortality. Overdiagnosing CHF can lead a physician to miss alternate diagnoses such as GE reflux,

COPD, asthma and allergies. Still, any test that at least helps confirm CHF in specific cases can save critical time and money for the patient. NT-ProBNP has a role in emergent and primary care. This role has not yet been clearly defined. ■

How Safe Is Triage by an After-Hours Telephone Call Center?

Citation: Kempt A, Bunik M, Ellis J, et al. *Pediatrics*. 2006;118:457-463.
<http://pediatrics.aappublications.org/cgi/content/abstract/118/2/457?etoc>



Key point: Telephone triage is an effective way to manage patients with after-hour medical concerns.

The authors' goals were to assess (1) compliance with nurse disposition recommendations, (2) frequency of death or potential underreferral associated with hospitalization within 24 hours after a call, and (3) factors associated with potential underreferral for children receiving care within an integrated healthcare delivery organization who were triaged by a pediatric after-hours call center.

The study population included all pediatric patients enrolled in Kaiser Permanente Colorado whose families called the Children's Hospital after-hours call center in Denver, CO, between October 1, 1999, and March 31, 2003. Post-call disposition recommendations were categorized as urgent (visit within four hours), next day (visit between four and 24 hours), later visit (visit in >24 hours), or home care (care at home without a visit). Compliance with the nurses' triage disposition recommendations was calculated as the proportion of cases for which utilization data matched the disposition recommendations.

Of the 32,968 eligible calls during the study period, 21% received urgent, 27% next day, 4% later visit, and 48% home care disposition recommendations. Rates of compliance with both urgent and home care disposition recommendations were 74%, and the rate of compliance with next day recommendations was 44%. No deaths occurred within one week after the after-hours calls. The rate of potential underreferral with subsequent hospitalization was 0.2%, or one case per 599 triaged calls. In multivariate modeling, age of <6 weeks or >12 years and being triaged after 11 p.m. were associated with higher rates of potential underreferral.

Comment: Large databases of clinical data are critical for iden-

tifying at-risk populations for any medical issue. In this case, neonates and teens were at a greater risk of underreferral. As such, it is possible to lower the threshold for referral for these groups, and then reassess the success of this approach within a few months. Over time, it will likely be possible to generate very specific risk scores for each patient type who calls in to such a telephone center. ■

Sonography of the Hip-joint by the Emergency Physician (SHEP): Its Role in the Evaluation of Children Presenting With Acute Limp

Citation: Shavit I, Eidelman M, Galbraith, R. *Pediatr Emerg Care*. 2006;22:570-573.
<http://www.pec-online.com/pt/re/pec/abstract.00006565-200608000-00007.htm;jsessionid=GzLQJslJ1cjXmvSlJfpPoz-Mp3y83n2DNYzMgNI2j58S9sQjh7Rhh!740363489!-949856144!8091!-1>

Key point: SHEP has the potential to identify critical diagnoses such as septic arthritis and osteomyelitis of the femur.

This paper describes a new imaging bedside test called Sonography of the Hip-joint by the Emergency Physician (SHEP) and considers whether its use as a triage tool for the presence of fluid in the hip joint can guide the emergency physician to the right diagnosis.

This was a case series of five children who presented to the ED with an acute onset of limp. In addition to a careful clinical history and physical examination, each child received SHEP. Follow-up confirmed that the presumptive diagnosis made in the ED was correct. The SHEP tests were found helpful in diagnosing transient synovitis (three cases), septic arthritis (one case), and osteomyelitis of the femur (one case).

As such, the SHEP tests provided additional information that narrowed the differential diagnosis, and minimized unnecessary blood tests and diagnostic imaging studies.

Comment: The ER physician continues to increase his/her per-
 vue when performing advanced testing in the ER. Today, ER physicians use ultrasonography to identify free fluid in the abdomen, assess pregnancies, look for renal stones, and more. In practical terms, rather than wait for radiological services (or support the extra cost of an onsite radiologist in the ER), an ER physician can personally "wave a wand" over the patient and make a diagnosis. Ultrasonography training is incorporated into most ER residencies today and in a busy ER, the residents and attendings get enough experience to develop clear expertise in ER-appropriate ultrasounds. This trend should reduce time to diagnosis and treatment times. ■