



On the San Francisco Syncope Rule, Antibiotics in Pyelonephritis, and the Accuracy of Helical CTs

■ 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.

San Francisco Syncope Rule: Less Sensitive Than Previously Reported

Key point: An independent validation study demonstrated a sensitivity of only 74% for predicting serious outcomes.

Citation: Birnbaum A, Esses D, Bijur P, et al. Failure to validate the San Francisco Syncope Rule in an independent emergency department population. *Ann Emerg Med.* 2008;52(2):151-159.

Most patients who present with syncope have benign etiologies, but, for some, syncope is caused by a potentially life-threatening condition. Differentiating between the two etiologies is often difficult in an emergency department; as a result, many patients who might not require inpatient workup are admitted.

The San Francisco Syncope Rule was developed to identify low-risk syncope, and the original study reported 96% sensitivity for detection of short-term (seven-day) serious outcomes, defined as death, myocardial infarction, arrhythmia, pulmonary embolism, stroke, subarachnoid hemorrhage, significant hemorrhage, or any condition causing or likely to cause a return ED visit and hospitalization for a related event.

The rule categorizes patients as high risk for serious outcomes if they have any of the following features (remembered by the mnemonic CHESS):

history of congestive heart failure

- hematocrit <30%
- abnormal electrocardiogram
- shortness of breath
- systolic blood pressure <90 mm Hg

In a prospective, observational cohort validation study, researchers applied the rule to 713 adult patients who presented to a university hospital ED with acute syncope or near syncope and followed the patients at 7 days to detect serious outcomes. Of 61 patients (9%) with serious outcomes, 16 (26%) had not been identified as high risk by the rule. Sensitivity of the rule to predict serious outcomes was 74%, specificity was 57%, negative likelihood ratio was 0.5, and positive likelihood ratio was 1.7.

[Published in *J Watch Emerg Med*, September 19, 2008—Richard D. Zane, MD, FAAEM.] ■

Early Antibiotic Treatment of Pyelonephritis

Key point: Early antibiotic treatment did not affect the rate of renal scarring compared with delayed treatment.

Citation: Hewitt IK, Zucchetto P, Rigon L, et al. Early treatment of acute pyelonephritis in children fails to reduce renal scarring: Data from the Italian Renal Infection Study Trials. *Pediatrics.* 2008;122(3):486-490.

Many experts believe that early antibiotic treatment of pyelonephritis in children might prevent the development of renal scars. As part of a randomized clinical trial in which 287 children (age range, 1 month to 7 years) with pyelonephritis (confirmed by dimercaptosuccinic acid [DMSA] scan) received different



Nahum Kovalski is an urgent care practitioner and assistant medical director/CIO at Terem Immediate Medical Care in Jerusalem, Israel.

Continued on page 32

Table 2. Tailoring Your Approach to Segment and Customer Variables

	Segment A	Segment B	Segment C
Employer type	Large (>400) Group meetings Creative services	Mid-sized Traditional outreach	Small (<50) E-mail/direct mail Marketing by phone
Industry type	Gaming Guest services Addiction medicine	White Collar Executive health Travel medicine Background checks	All Others Traditional outreach
Proximity	Close (<5 miles) Stress ease of access	Mid-distance Traditional outreach	Distant (>15 miles) On-site services Mobile services

ing to smaller employers, emphasize multiple contacts through various modalities (e-mail, voice mail, letters) that reiterate a constant message and continually reinforce your clinic’s name.

How does a clinic define a large, medium, or small employer prospect? It depends on the market. The definition of employer size will vary markedly from Chicago, where a “large” employer might have more than 1,000 employees to Cullman, Alabama, where a large employer might be defined as any company with more than 50 employees.

Industry Type

Some markets may be perfectly heterogeneous, with an employer mix that reflects American industry as a whole. Others may have prominent niches, such as Las Vegas, resort communities, and/or markets with an agricultural or white-collar emphasis. Should a unique employer segment be identified, your clinic must determine specific outreach tactics and/or appropriate product niches.

Proximity

Different strategies and an emphasis on different products may apply to employers based at various distances from your urgent care clinic(s).

Your clinic should showcase its convenience, for example, to employers most proximate to your locale. Alternatively, a clinic can emphasize possible on-site and mobile services to employers located at the periphery of your market area.

The Chicago-Cullman continuum applies to this segment as well: a “distant employer” in Chicago may be simply more than a 15-minute drive away, while those in Cullman might be 30 or more miles away from the clinic. ■

antibiotic regimens, Italian investigators assessed response to therapy and the association between duration of fever before treatment and renal scarring 12 months after treatment.

No relation was found between scars on DMSA scan at 12 months and the number of days of fever (from <1 day to ≥5 days) before the start of antibiotic treatment (about 30% of children had scars, regardless of duration of fever).

Duration of fever after initiation of antibiotic treatment also was not associated with renal scarring.

The results were the same in analysis restricted to the 227 children aged 1 month to 2 years. In addition, no relation was found between duration of fever before treatment and four indices of inflammation: height of fever at presentation, white blood cell count, neutrophil count, and C-reactive protein level.

These results suggest that urgent treatment of children with pyelonephritis does not seem to affect the development of renal scars compared with delayed treatment. Children should be treated promptly, but after appropriate laboratory studies have been performed and a presumptive diagnosis has been made.

[Published in *J Watch Pediatr and Adolesc Med*, September 17, 2008—Howard Bauchner, MD.] ■

Helical CT is More Accurate Than Clinical Judgment for Diagnosing Appendicitis

Key point: Even in cases of clinically apparent appendicitis, CT is more accurate.

Citation: Kim K, Rhee JE, Lee CC, et al. Impact of helical computed tomography in clinically evident appendicitis. *Emerg Med J*. 2008;25:477-481.

The role of multidetector computed tomography (MDCT) scanning in the diagnosis of appendicitis is evolving as technology and resolution improve. Researchers in Korea compared the diagnostic accuracy of 16-detector MDCT scanning and clinical impression in 157 consecutive patients who presented to two emergency departments with signs or symptoms that raised concern for possible appendicitis.

All patients were evaluated by emergency physicians and senior residents who determined whether the clinical diagnosis was appendicitis. All patients then underwent MDCT with intravenous contrast only. MDCT scans were read by two radiologists who specialized in CT interpretation. The final diagnosis of appendicitis was based on surgical pathology or clinical follow-up.

The positive predictive value of the examining physician’s clinical impression was 73%, and the negative predictive value was 56%. Corresponding values for MDCT were 97% and 97%.

These findings suggest that MDCT scanning is more accurate than clinical judgment for diagnosing appendicitis, even in cases that are considered to be “clinically apparent.”

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