



# On Med Errors, Syncope in Older Patients, Pain with Cervical Strain, Low Back Pain, and Red Eye

■ 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.

### Diagnostic Medical Errors: What Goes Wrong and Why

**Key point:** *Errors often occur because clinicians don't consider the diagnosis, test for it, or follow up on abnormal test results.*  
**Citation:** Schiff GD, Hasan O, Kim S, et al. Diagnostic error in medicine: Analysis of 583 physician-reported errors. *Arch Intern Med.* 2009;169:1881-1887.

Autopsy data from the past few decades reveal diagnostic error rates of 10% to 15%, but do not inform us about the causes of these errors. Absent extraordinary surveillance of the clinical process, only reporting by clinicians who have committed or observed errors can tell us about what goes wrong and why.

Researchers recruited U.S. physicians by mail and at meetings and asked them to anonymously report three cases of diagnostic errors (their own cases or those of close associates) and to fill out a questionnaire describing the error, the contributing factors, the seriousness of its clinical impact, and the correct diagnosis.

The steps in the diagnostic process that were most frequently associated with errors were laboratory and radiologic testing, accounting for 44% and 32% of errors, respectively.

Pulmonary embolus and drug reactions were the most frequently missed diagnoses (4.5% each), followed by lung can-

cer (3.9%), colorectal cancer (3.3%), breast cancer and acute coronary syndrome (3.1% each), and stroke (2.6%).

Seriousness of clinical impact was rated as major for 28% of errors, moderate for 41%, minor for 22%, and none for 6%; data were missing for 3%.

How to ensure that physicians always consider and rank the possible etiologies of their patients' symptoms remains vexing. A system of real-time, computer-driven data management that is embedded in physician workflow could go a long way toward meeting this goal.

[Published in *J Watch Emerg Med*, December 18, 2009—].  
Stephen Bohan, MD, MS, FACP, FACEP. ■

### Can We Risk Stratify Older Patients with Syncope?

**Key point:** *A syncope score stratifies patients aged ≥60 into groups with low, intermediate, and high risk for serious events within 30 days.*

**Citation:** Sun BC, Derose SF, Liang L-J, et al. Predictors of 30-day serious events in older patients with syncope. *Ann Emerg Med.* 2009;54(6):769-778.

Guidelines suggest that patients <60 years of age with no obvious cause of syncope or evidence of cardiac or electrocardiogram abnormalities can be treated as outpatients. Less evidence is available to guide management of syncope in patients aged ≥60, who have higher rates of syncope and associated serious events than younger patients.

In a retrospective chart review, researchers identified clinical variables that correlated with the occurrence of serious



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

## ABSTRACTS

events within 30 days in 2,584 patients aged  $\geq 60$  who presented with syncope or near syncope without a serious underlying cause to three emergency departments in California during a four-year period.

Serious events included arrhythmia, hemorrhage or anemia, myocardial infarction, structural heart disease, stroke, pulmonary embolism, aortic dissection, subarachnoid hemorrhage, and death.

Variables associated with increased risk for serious events were age  $>90$ , male sex, history of arrhythmia, triage systolic blood pressure  $>160$  mm Hg, abnormal ECG result, and abnormal troponin I level. One variable—complaint of near syncope rather than syncope—was associated with lower risk.

The authors calculated risk scores by adding high-risk predictors and subtracting the low-risk predictor. A score of -1 or 0 correlated with an event rate of 2.5% (low risk); a score of 1 or 2 with an event rate of 6.3% (intermediate risk); and a score of 3 to 6 with an event rate of 20% (high risk).

[Published in *J Watch Emerg Med*, January 8, 2010—Richard D. Zane, MD, FAAEM.]■

### Muscle Relaxant Adds No Benefit to Ibuprofen for Cervical Strain

*Key point: Pain relief did not differ among patients who received ibuprofen, cyclobenzaprine, or both drugs.*  
Citation: Khwaja SM, Minnerop M, Singer AJ. Comparison of ibuprofen, cyclobenzaprine or both in patients with acute cervical strain: A randomized controlled trial. *CJEM*. 2010;12(1):39-44.

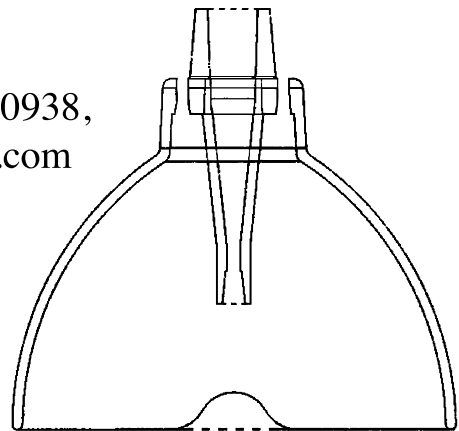
Muscle relaxants often are prescribed for neck and back pain, despite the lack of evidence of benefit. Researchers evaluated the effect

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of cyclobenzaprine in a prospective, randomized, double-blind study in a convenience sample of 61 adult patients (mean age, 34; 58% women) who presented to a level I trauma center emergency department with acute cervical strain.

Patients received ibuprofen (800 mg), cyclobenzaprine (5 mg), or both drugs three times daily for up to seven days, as needed for pain. All patients received an initial dose of 800 mg of ibuprofen in the ED.

Patients rated pain severity on a 100 mm visual analog scale 30 to 60 minutes after taking the morning dose of medication. Pain scores improved significantly over seven days in all three groups and did not differ among groups. Adverse effects were minimal.

A small dose of cyclobenzaprine was used in this study, perhaps to avoid the anticholinergic, antihistaminic, and sedative side effects of this drug, which is closely related chemically to tricyclic antidepressants.

No convincing evidence supports the use of cyclobenzaprine in painful musculoskeletal conditions, and the drug's benefit-to-adverse effect profile, therefore, argues against prescribing it.

[Published in *J Watch Emerg Med*, February 5, 2010—Kristi L. Koenig, MD, FACEP.] ■

### Low Back Pain and Best Practice Care: A Survey of General Practice Physicians

**Key point:** Usual Care for Low Back Pain Doesn't Align with Guideline Recommendations

**Citation:** Williams CM, Maher CG, Hancock MJ, et al. *Arch Intern Med*. 2010;170(3):271-277.

Researchers examined data on some 1,700 visits to general practitioners for new low back pain from 2005 to 2008, after national guidelines for treating musculoskeletal pain were released.

Among the findings: Although guidelines recommend acetaminophen as a first-line analgesic, it was prescribed for only 18% of patients. NSAIDs and opioids were prescribed for 37% and 20%, respectively. One fourth of patients were referred for imaging, despite guidelines advising against routine referral. Only one fifth of patients received advice and education as recommended.

The authors concluded that "the results indicate that in most cases, usual care is not evidence-based care and so is not likely to provide the best outcomes." ■

### Diagnosis and Management of Red Eye in Primary Care Reviewed

**Key point:** Primary care physicians can handle/triage cases of red eye.

**Citation:** Barclay L. Diagnosis and management of red eye in primary care reviewed.

Available at: [www.medscape.com/viewarticle/715549](http://www.medscape.com/viewarticle/715549).

Eye discharge, redness, pain, photophobia, itching, and visual changes are the characteristic signs and symptoms of red eye. The condition is usually benign and can be managed by primary care physicians. Conjunctivitis is the most common cause of red eye.

Other common causes of red eye conjunctivitis include blepharitis, corneal abrasion, foreign body, subconjunctival hemorrhage, keratitis, iritis, glaucoma, chemical burn, and scleritis.

Complete patient history and thorough eye examination are needed to diagnose the cause of red eye. Useful questions to cover in the history include duration of symptoms and whether they are unilateral or bilateral, type and amount of discharge, visual changes, pain severity, photophobia, response to previous treatments, use of contact lenses, and history of allergies or systemic illness.

Ocular examination should include thorough inspection of the eyelids, lacrimal sac, pupil size and reactivity to light, corneal involvement, and the pattern and location of hyperemia, as well as visual acuity and the presence or absence of preauricular lymph node involvement.

In viral conjunctivitis, vision, pupil size, and reaction to light are typically normal. Findings may include diffuse conjunctival injections (redness), preauricular lymphadenopathy, and a lymphoid follicle on the undersurface of the eyelid. Pain is usually mild or absent, but there may be occasional gritty discomfort with mild itching and watery to serous discharge.

Herpes zoster ophthalmicus is associated with a vesicular rash, keratitis, and uveitis. Rash and conjunctivitis usually precede the pain and tingling sensation in a dermatomal distribution, followed by periocular vesicles. Someone presenting with these symptoms should be referred to an ophthalmologist.

Acute and chronic bacterial conjunctivitis are associated with eyelid edema, conjunctival injection, mild to moderate pain with stinging foreign-body sensation, and mild to moderate purulent discharge. Visual acuity is usually preserved, with normal pupil reaction and no corneal involvement. The most predictive factor is the presence of mucopurulent secretions with bilateral glued eyes on awakening. *Staphylococcus aureus* is the most common pathogen in adults, and *Streptococcus pneumoniae* and nontypeable *Haemophilus influenzae* are most common in children.

The underlying cause of red eye determines the appropriate course of treatment. In the primary care management of red eye, a crucial objective is to recognize when emergent referral to an ophthalmologist is required.

Conditions mandating referral include severe pain refractory to topical anesthetics, need for topical steroids, vision loss, copious purulent discharge, corneal involvement, traumatic eye injury, recent ocular surgery, distorted pupil, herpes infection, or recurrent ocular infections. ■