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INSIDE

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Steroids or Non-steroidals in the Treatment of Gout-like Arthritis

ABSTRACT & COMMENTARY

By John Shufeldt, MD, JD, MBA, FACEP

Synopsis: *Comparison of the use of steroids and non-steroidal medication plus Paracetamol in the treatment of gout-like arthritis.*

Source: Man, CY, et al. Comparison of oral prednisolone/paracetamol and oral indomethacin/paracetamol combination therapy in the treatment of acute goutlike arthritis: A double-blind, randomized, controlled trial. *Ann Emerg Med*. 2007;49:670-677.

Acute gouty arthritis is the most common cause of joint inflammation in men over 40 years old. The disease is characterized by a crystal-induced inflammatory response in joints of middle age and elderly populations. The diagnosis of gouty arthritis is typically made clinically by the acute onset of a red, swollen, painful joint and by the presence of negatively birefringent uric acid crystals in joint aspirate. The diagnosis is often made without joint aspiration secondary to the difficulty of the procedure and lack of patient tolerance. The treatment of gouty arthritis is inconsistent, and evidence-based practice, according to Man and colleagues, is lacking. To that end, Man et al evaluated the use of oral prednisolone/paracetamol and oral indomethacin/paracetamol combination therapy in the treatment of gout-like arthritis.

Ninety patients, age 17 and older, who presented with acute arthritis suggestive of gout were enrolled in the study. Patients were included if they had a clinical diagnosis of gout defined as presence of pain and joint warmth. Also, the patient had to present within 3 days of onset, or had ankle or knee involvement and aspirate-containing crystals. Patients were excluded if they had a bleeding disorder, had suspicion of septic arthritis, a significant co-morbidity, or if they were lost to follow-up. Patients were randomized into the prednisolone group or into the indomethacin group.

Baseline characteristics, including pain scores, were similar in the 2 groups. Both treatments had a similar decrease in pain in the ED, and both treatment groups showed clinical improvement in joint

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swelling and stiffness; there was no significant statistical significance in improvement between the 2 groups. Both groups also took acetaminophen during the trial; on average the prednisolone groups took almost twice as much acetaminophen as the indomethacin group. Fifteen patients in the prednisolone group and 17 patients in the indomethacin group required additional treatment during the study.

However, 63% of the patients in the indomethacin group experienced side effects, compared to only 27% of patients in the prednisolone group. Indigestion, nausea, vomiting, epigastric pain, and dizziness were much more common in the indomethacin group. The most significant common adverse effects in the prednisolone group were dry mouth and dizziness. Seven patients, all from the indomethacin group, had serious side effects requiring hospitalization or out-patient treatment. Five of these patients developed GI bleeding. One of these patients was treated on an outpatient basis; the other 4 patients were admitted to the hospital.

COMMENTARY

This was the first study comparing 2 commonly available and inexpensive medications in the treatment of acute gout-like arthritis. The results showed that the treatment of acute gout-like arthritis with these 2 medications produced similar pain relief, although the patients in the prednisolone group took significantly more acetaminophen than the patients in the indomethacin group. Also, patients taking prednisolone had statistically significant fewer side effects than patients in the indomethacin group.

This study demonstrates that although NSAIDs are generally recommended as first line therapy in patients with acute gouty arthritis, a short course of corticosteroids could be used as an alternative for acute gout, particularly when NSAIDs are contraindicated, or as the first line treatment when combined with acetaminophen. In patients at risk for gastrointestinal bleeding, or where GI bleeding could have significant morbidity, such as the elderly, a short dose of corticosteroids combined with acetaminophen may be preferable to NSAIDs.

Many patients present to urgent care settings complaining of the rapid onset of pain, swelling, and inflammation of an affected joint. In patients who do not have an infectious etiology to their symptoms, this study demonstrates that we have alternatives to NSAIDs in the treatment of acute gouty arthritis. ■

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Gaining on Migraines: Combination Therapy

ABSTRACT & COMMENTARY

By Donna Woods ,DO

Regional Medical Director, NextCare Urgent Care

Dr. Woods reports no financial relationships relevant to this field of study.

Synopsis: *Sumatriptan, 85 mg, plus naproxen sodium, 500 mg, as a single tablet for acute treatment of migraine resulted in more favorable clinical benefits compared with either monotherapy, with an acceptable and well-tolerated adverse effect profile.*

Source: Brandes JL, et al. Sumatriptan-naproxen for acute treatment of migraine: A randomized trial. *JAMA*. 2007; 297:1443-1454.

MIGRAINES ARE HEADACHE ATTACKS WHICH ARE generally characterized by unilateral severe headache, accompanied by nausea, photophobia, and sometimes aura. Several complex mechanisms are involved in migraines. In the initial stage of a migraine, peripheral nerve stimulation leads to CNS vasodilation via the production of inflammatory substances. The inflammatory substances produced during this initial stage sensitize neurons centrally in the trigeminal nucleus caudalis, causing them to fire continuously regardless of input from the periphery. It is hypothesized that this central-sensitization is responsible for the "full-blown" migraine headache.

Triptans have been shown to decrease vasodilation and reduce synaptic transmission between peripheral and central neurons, thus interrupting the activation of central pathways during the early stages of migraine.

NSAIDs inhibit prostaglandin production, which may prevent or reverse central sensitization.

Several recent studies suggest that the combination of sumatriptan succinate and naproxen sodium may be useful in both acute relief and prolonged therapeutic response. This study investigates the efficacy and safety of a combination rapid-release tablet (sumatriptan 85 mg/ naproxen 500 mg) as compared with placebo and monotherapy, with either sumatriptan or naproxen in the acute treatment of migraine.

Methods: Two replicate, randomized, controlled, double-blinded studies were conducted at 118 US clinical study sites. Patients aged 18-65 were enrolled if they had 2-6 migraines per month in the preceding 3 months and if they were able to distinguish their migraines. They were excluded based on pregnancy, breast-feeding, chronic daily headaches, BP > 160/95, and the use of regular NSAIDs, ergots, or St. John's Wort. No migraine prophylaxis medication changes were allowed in the 2 weeks preceding the treatment. Patients were randomized into 4 groups, receiving sumatriptan/naproxen combo, sumatriptan 85mg, naproxen 500 mg, or placebo. They were instructed to use the study-drug at home to treat their next migraine when the pain became moderate-severe. Diary cards were given to patients to record the severity of their headache, associated symptoms, and the use of any additional rescue medications required by the patient after the first 2 hours post-treatment. These characteristics were recorded at 0.5 hrs, 1.0 hour, 1.5 hrs, 2.0 hrs, and every hour thereafter. No second dose of study medication was given. The number of patients included in the study was 1461 in Study 1 and 1495 in Study 2. The primary outcomes measured were the percentage of patients in each group with headache relief 2 hours post-study-drug and 24 hours post study-drug, as well as absence of photophobia, phonophobia, and nausea.

Results: Combination therapy was more effective than monotherapy with either sumatriptan or naproxen for headache relief at 2 hours. The incidences of headache relief at 2 hours were 65%, 55%, 44%, and 28% with sumatriptan-naproxen, sumatriptan monotherapy, naproxen monotherapy, and placebo, respectively, in study1 ($P < .001$ for all comparisons except combination vs sumatriptan monotherapy where $P < .009$). The corresponding percentages in study 2 were 57%, 50%, 43%, and 29% ($P < .001$ for all comparisons, except combination vs sumatriptan monotherapy was $P < .03$).

The absence of nausea 2 hours after dosing was slightly higher in study 1 (71% vs 65%, $P < .007$), but was not found to be statistically significant in Study 2.

For sustained pain-free response at 24 hours, the combination therapy was superior (25% and 23% in Studies 1 and 2, respectively; $P < .01$) to sumatriptan monotherapy (16% and 14%, in studies 1 and 2), naproxen monotherapy (10% and 10% in both studies), and placebo (8% and 7% in studies 1 and 2).

The percentages of patients with at least one adverse event was 27%, 24%, 13%, and 12% in patients receiving combination therapy, sumatriptan monotherapy, naproxen monotherapy, and placebo, respectively, in Study 1. In Study 2, the percentages were 26%, 28%, 14%, and 10% ($P < .001$ for all comparisons, except the combination drug vs sumatriptan monotherapy, in which case the p value was >.05%, and thus, not significant.

Discussion: The 2 studies published in this report suggest that acute treatment of migraine with both a triptan and an NSAID is superior to treatment with either medication individually for relief at 2 hours post-treatment, and sustained relief at 24 hours. Although these studies appear to be well done, there are some limitations. Most of the patients enrolled in these studies were Caucasian and female. Additionally, concurrent use of oral contraceptives was not adequately addressed. This study also did not compare the combination drug (single, fixed-dose tablet) to treatment with naproxen and sumatriptan as 2 separate tablets.

COMMENTARY

While no serious adverse events attributed to the study medications were reported in Study 1, one serious adverse event was reported in Study 2. A 58-year-old female patient had been treated with sumatriptan monotherapy and experienced heart palpitations, which required hospital admission. This patient had 5 risk factors for CAD. The patient was treated with aspirin, nitroglycerin, and lorazepam, and the event was reported as resolved several days later.

Common side effects of sumatriptan include flushing, weakness, drowsiness, dizziness, malaise, a feeling of warmth, and paresthesias. The incidence of cardiovascular side effects is as follows: chest pain/tightness/heaviness/pressure (1% to 2%), hyper-/hypotension (1%), palpitation (1%), and syncope (1%). There have been rare reports of myocardial infarction and sudden death,[1] possibly due to coronary artery constriction.[2]

Although triptans are rarely associated with the serious side effect of acute coronary syndrome, there is much evidence available to suggest that they are very safe when administered to select patients. Triptans were

administered to 13,664 patients as a part of a large cohort study, and no association was found between triptan treatment and stroke, other cardiovascular events, or death.[3] However, in this study, triptans were only prescribed to those at less risk of cardiovascular events.

It is recommended that triptans be avoided in patients with familial hemiplegic migraine, basilar migraine, ischemic stroke, ischemic heart disease, Prinzmetal's angina, uncontrolled hypertension, and pregnancy.[4] Triptans should also be avoided in patients being treated with monoamine oxidase inhibitors and ergotamine preparations.[5] Triptans have also recently been associated with the risk of serotonin syndrome when administered to patients on selective serotonin reuptake inhibitors (SSRIs) or selective serotonin/norepinephrine reuptake inhibitors (SNRIs).[6]

Migraine headaches are a common presentation in urgent care centers. The US Headache Consortium recommends the use of migraine-specific agents (eg, triptans, DHE, ergotamine) in patients with more severe migraine and in those whose headaches respond poorly to NSAIDs or combination analgesics.[7,8]

Many studies have shown that combination therapy for migraines is more effective than treatment with a single drug. Many of these studies have examined adjunctive treatment with anti-emetics. Interestingly, several studies show enhanced relief of migraine pain when anti-emetics are added as an adjunct to treatment. One study randomly assigned 128 patients with migraine to chlorpromazine IV or placebo. Chlorpromazine treatment was associated with significant improvement in pain, nausea, photophobia, phonophobia, and need for rescue medication at 60 minutes, compared with placebo.[9] Additionally, chlorpromazine-treated patients had a significantly reduced rate of headache recurrence at 24 hours.

Because migraine headaches can also cause gastroparesis, which can affect absorption of some oral medications, parenteral administration may be preferable. I usually start treatment with IM Toradol and Phenergan. The addition of a triptan should be considered in patients with moderate-to-severe migraines, or to those who do not respond to initial treatment. However, it is extremely important to know the contraindications to triptans well enough to screen which patients may safely benefit from this therapy.

The studies presented in this *JAMA* article are large, randomized, and double-blinded. However, this data should be examined critically and applied cautiously, as it was funded by GlaxoSmithKline and POZEN, the sponsor of the combination investigational drug. ■

References

1. Ottervanger JP, et al. Characteristic and determinants of sumatriptan-associated chest pain. *Arch Neurol*. 1997;54:1387-1392.
2. MaassenVanDenBrink A, et al. Coronary side-effect potential of current and prospective antimigraine drugs. *Circulation*. 1998;98:25-30.
3. Hall GC, et al. Triptans in migraine: The risks of stroke, cardiovascular disease, and death in practice. *Neurology*. 2004;62:563-568.
4. Jamieson DG. The safety of triptans in the treatment of patients with migraine. *Am J Med*. 2002;112:135-140.
5. Liston H, et al. The association of the combination of sumatriptan and methysergide in myocardial infarction in premenopausal women. *Arch Intern Med*. 1999; 159:511-513.
6. www.fda.gov/medwatch/safety/2006/safety06.htm# Triptans (Accessed August 30, 2006).
7. Silberstein, SD, Rosenberg, J. Multispecialty consensus on diagnosis and treatment of headache. *Neurology*. 2000; 54:1553.
8. Silberstein SD. Practice parameter: Evidence-based guidelines for migraine headache (an evidence-based review): Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2000;55:754-762.
9. Bigal ME, et al. Intravenous chlorpromazine in the emergency department treatment of migraines: A randomized controlled trial. *J Emerg Med*. 2002;23:141-148.

Acute Low Back Pain: How to Evaluate and Treat

ABSTRACT AND COMMENTARY

By Matt Shores, MD

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Dr. Shores reports no financial relationships relevant to this field of study.

Synopsis: *The management of acute low back pain is conservative once red flag symptoms and signs have been eliminated. In addition, there is good evidence supporting particular modalities in treating low back pain.*

Source: Kinkade S. Evaluation and treatment of acute low back pain. *Am Fam Physician*. 2007;75:1181-1188.

In Scott Kinkade's article in the April 15th edition of *American Family Physician*, he presents a succinct review of the evaluation and treatment of acute

lumbar pain. Kinkade defines acute low back pain "as pain that occurs posteriorly in the region between the lower rib margin and the proximal thighs, and that is less than 6 weeks' duration." On any given day, low back pain may affect almost 6% of adult Americans. Approximately 60-70% of people will experience low back pain at some point in their lifetime. The majority of patients with low back pain present to their PCP, and in a system that makes it difficult to get an urgent appointment with a PCP, a growing number of patients with low back pain present to emergency departments and urgent care centers.

The most important step in evaluating acute low back pain is recognizing red flag signs and symptoms in an attempt to sift out serious conditions, including neoplasm, infection, and visceral disease. A patient that presents with low back pain and a history of weight loss, with spine tenderness on exam, must be evaluated for neoplasm. On the other hand, if a patient does have spine tenderness on exam, but presents with a history of constitutional symptoms such as fever, chills, and sweats, then the possibility of infection needs to be explored. Non-spinal or visceral disease should be easier to sort out, but is nonetheless imperative. For example, patients with GI ailments, such as pancreatitis or cholecystitis, may have acute back pain but should also have abdominal pain symptoms and abdominal signs on exam. In addition, aortic aneurysms may present as back pain, but a pulsatile mass may be felt on exam. All in all, mechanical low back pain accounts for 97% of the causes of low back pain, whereas visceral disease only accounts for 2% and non-mechanical spinal conditions, such as neoplasm, account for only 1%.

Once the search for red flag symptoms and signs has come up empty, and serious conditions have been ruled out, the evaluation and treatment of low back pain may take a more conservative approach. Mechanical low back pain includes lumbar strain, degenerative disk, herniated disk, compression fracture, spinal stenosis, and spondylolisthesis. Lumbar strain accounts for more than 70% of mechanical low back pain. When no red flag symptoms or signs are present, it is safe to attack the management of low back pain conservatively and treat for 4-6 weeks prior to further investigation, with imaging or more aggressive treatment modalities.

Treatment for acute low back includes a wide variety of options, some of which have a great deal of support, and others that have little to no support, if not support against their use. Non-steroidal anti-inflammatory drugs have consistent, good quality patient-oriented evidence supporting their use, and there is strong evidence that shows equal efficacy among various NSAIDs. The use of acetaminophen as an alternative has conflicting support, but may be used as an adjunct. The use of opioids also has some conflicting evidence in regards to their use in treating acute low back pain. Several small studies have shown no significant advantage of opioid use as compared to NSAIDs. However, it is commonly accepted that some patients with acute low back pain, and specifically sciatica, may require opioids initially in treating their pain. Opioids should only be used for a short period, if used at all. Muscle relaxants do have strong evidence (rating A) supporting their use, and their use is most beneficial in the first 2 weeks of treatment. Common muscle relaxants include Skelaxin and Flexeril. Kinkade notes that Flexeril may be used at lower doses (5mg tid) to offer good symptom relief with significantly less adverse side effects. Oral corticosteroids have no evidence to support their use in treating acute low back pain.

The use of medications is only a small aspect in treating low back pain. It is thought by many that bed rest is essential in recovering from a low back strain. However, the evidence contradicts this thought. In fact, there is consistent, good quality, patient-oriented evidence that shows bed rest greater than 2-3 days is ineffective, and may be harmful. Patients should be advised to stay active, as they will likely have less time missed from work, improved functioning, and less pain. In addition to the misconception in regards to bed rest, it is often thought that specific back exercises may be helpful in improving function after an acute low back strain. Again, there is consistent, good quality, patient-oriented evidence that contradicts this thought. Specific back exercises have, in fact, been shown to not be helpful. In terms of heat and ice therapy, there is inconsistent or limited quality, patient-oriented evidence that supports the use of heat, and there is no evidence that supports the use of ice. Finally, it is difficult to evaluate the use of physical therapy because the actual modalities that physical therapy programs use varies a great deal from one program to the next.

COMMENTARY

Acute low back pain is a common reason for patients to present to an urgent care center. Patients strain their back and often cannot get in with their PCP for immediate evaluation and treatment. It then falls on the shoulders of the urgent care physician to properly evaluate the patient and begin treatment. Although the majority of acute low back pain may be approached conservatively, it is essential that red flag symptoms and signs are picked up when present. Typically, in the absence of red flags, imaging is not necessary in evaluation low back pain.

Once serious or threatening conditions are ruled out, conservative treatment may be started. Given an evidence rating of A (consistent, good quality, patient-oriented evidence), it may be appropriate to treat a patient that presents to an urgent care center with acute low back pain in the following manner: the patient may be started on an NSAID and a skeletal muscle relaxant (flexeril at 5 mg offers relief with less adverse side effects). The patient should be advised to stay active, as bed rest is often ineffective and may be harmful. The patient may be told that no specific back exercises have been shown to be beneficial. Finally, the patient may receive some relief from the use of heat, but ice has not been shown to be helpful.

Of course, there are multiple modalities that patients and physician use in treating acute low back pain. Although this article details which treatment options have strong evidence-based support, many forms of therapy may still have strong anecdotal support among both patients and physicians. It is often the case that there is no contraindication in using alternative treatment options as long as the patients' best interest is kept in mind and no harm is brought to the patient. Ultimately, it is difficult to argue against strong, patient-oriented evidence. In treating low back pain, it should be remembered that 95% of patients improve in 12 weeks. Patients should be reassured, but close follow-up should ensue 4-6 weeks after therapy is started. ■

Resources

1. Kinkade, Scott. Evaluation and treatment of acute low back pain. *Am Fam Physician*. 2007;75:1181-1188
2. Deyo RA, Weinstein JN. Low back pain. *N Engl J Med*. 2001;344:363-370.

Dying after Discharge

ABSTRACT & COMMENTARY

By John Shufeldt, MD, JD, MBA, FACEP

Synopsis: *Evaluates the cause of unanticipated death in patients sent home from the emergency department in the hopes of evaluating patterns of potential preventable medical error.*

Source: Sklar DP, et al. Unanticipated death after discharge home from the emergency department. *Ann Emerg Med*. 2007;49:735-745.

EMERGENCY DEPARTMENTS ARE CONSIDERED A HIGH-risk area for medical errors leading to patient deaths. Patients treated in the ED, who subsequently die, may be victims of medical error. This study looks at the frequency and cause of unanticipated death among patients discharged from the emergency department, and reviews the records to determine potential patterns of preventable medical error.

Previous research on patients treated and released from the ED demonstrates that 13 per 100,000 died after discharge and 3 per 100,000 suffered an unexpected death directly related to the ED visit. In this study, Man and colleagues only used the medical examiner's report to determine the incidence of death after ED visit. Ruptured aortic aneurysm was the most common cause of death in this population.

This was a retrospective 10-year study of 387,334 ED visits among 186,859 individuals in an urban tertiary-care center. Patients were included in the study if they were over 10-years-old and registered as emergency department patients in the time period from November 1994 to November 2004; dying within 7 days of discharge. Also, their death must have been reported to the Office of the Medical Examiner. Deaths were assessed for relatedness to the last ED visit to determine if the death was expected, as well as to determine if there was preventable medical error. Medical error was defined using he Institute of Medicine's definition, in which the error is "the failure of a planned action to be completed as intended (ie, error of execution) of the use of a wrong plan to achieve an aim (ie, error of planning)." The definition was further expanded to include failure to solicit or interpret information that would have led to a different action.

During the study years, there were 387,334 visits among 186,859 patients, averaging 2.1 visits per person. Half the patients were male, and the average age was 39.7 years. The average number of days between discharge from the ED to death was 3.8. Man et al identified 117 patients, or 30.2 per 100,000 ED patients, who died within 7 days of discharge. Of these 117 patients, 58 (50%) were expected and 35 (60%) had possible error. The unexpected, but related group, contained 15 patient deaths, 9 of which were determined to be caused by possible error. The mean age of the expected death group was 56.2 years; the mean ages of the possible error unexpected and nonerror unexpected was approximately 48-years-old.

Of the patients who died, 4 distinct themes emerged: atypical presentation of an acute problem, chronic disease with decompensation, abnormal vital signs, and mental illness or substance abuse that may have made it less likely that the patient would return with worse symptoms. Every patient who died had at least one of

these distinct themes as a contributing cause of their death, and many of them had more than 2. Abnormal vital signs occurred in the majority (83%) of patients who died within 7 days of ED discharge.

Diagnoses for the possible error group included:

- Cardiac Related
- Coronary artery disease (n = 6)
- Congestive heart failure (n = 1)
- Myocardial infarction (n = 2)
- Endocarditis (n = 1)
- Cardiomyopathy (n = 1)
- Neurological
- Subdural (n = 2)
- Intracerebral bleeding (n = 2)
- Seizure (n = 1)
- Meningitis (n =1)
- Gastrointestinal
- Gastrointestinal bleeding (n = 1)
- Peritonitis (n = 1)
- Bowel infarction (n = 1)
- Ischemic bowel (n = 1)
- Hepatic failure (n = 1)
- Abdominal aortic aneurysm (n = 1)
- Pulmonary
- Pulmonary embolism (n = 2)
- Pneumonia (n = 1)

The remaining deaths were caused by a variety of different illnesses, including AIDS, sepsis, ARDS, and one missed complication from a feeing tube placement.

COMMENTARY

The risk of death post urgent care visit is not dissimilar from the risk of death post emergency department visit, in as much as patients do not necessarily self-triage appropriately. Thus, this study has broad and concerning implications for urgent care medicine.

Unexplained and unresolved abnormal vital signs, most commonly tachycardia, occurred often in cases of unexpected death. Unexplained tachycardia often occurs in ED patients as well who are discharged and do not die. Therefore, abnormal vitals are a sensitive, yet nonspecific, indicator of risk. The presence of abnormal vitals should elicit some investigation, or at minimum, an explanation in the medical record.

Another common finding was the unexpected death secondary to a chronic condition, most often congestive heart failure. Man et al surmised that this may be secondary to the difficulty in discerning the steady state of a chronic condition from an insidious decompensation. In many of these patients, the discharge diagnosis was similar to the cause of death. Only the rapidity of the outcome, as opposed to the diagnosis, was at issue.

The third most common area of risk was the subtle presentation of a rare condition. ED physicians are trained to think "worst first." It is this training that hopefully improves the diagnosis of these "zebras." In an urgent care setting, the provider must be vigilant to not "drop their guard" while wading through the sea of the walking well. The diagnosis of these high-risk, low-prevalence diseases will continue to be the "holy grail" of urgent care risk reduction.

Finally, and probably less important in the urgent care setting, are the patients with mental illness who become lost to follow-up, secondary to their inability to seek further treatment if they are not getting better. In this study, many of these patients had drug or alcohol issues impeding their ability to fend for themselves.

The take home point for urgent care providers is to stay on guard for the high-risk, low-prevalence disease states, respond to abnormal vital signs, document informed consent discussions with patients and their families, and finally, to have a low threshold for transferring patients to the emergency department for continued care and diagnosis. ■

I Have the Worst Headache of My Life!

ABSTRACT & COMMENTARY

By John Shufeldt, MD, JD, MBA, FACEP

Synopsis: *An overview of the etiology, evaluation and treatment of subarachnoid hemorrhage.*

Source: Tofteland ND, Salyers WJ. Subarachnoid hemorrhage. *Hospital Physician*. 2007;43:31-39.

SUBARACHNOID HEMORRHAGE SAH IS AN ACUTE NEUrological emergency which affects more than 20,000 patients in the United States each year. The 30-day mortality approaches 50%, and survivors are often left with profound neurological deficits. Cerebral aneurysms and AVMs account for 70-80% of SAH. The incidence of saccular aneurysms in the United States is between 1-6%, respectively. The risk of rupture depends on size, location, and wall thickness.

The classic history is a sudden onset of the worst headache of the patient's life. The onset often occurs during physical activity, sexual activity, or even at rest. Associated signs are nausea, photophobia, vomiting, altered mental status, and focal or generalized neuro-

symptoms. Approximately 33% of patients who present with SAH give a history of a severe headache during the preceding week. This is thought to be caused by a minor leaking of blood into the Subarachnoid space.

The physical examination of patients with SAH often reveals nuchal rigidity, cranial nerve palsies, alerted mental status, and vomiting. In patients without these findings, who present with a severe or different headache, or if the headache is accompanied by syncope or focal neurological deficit, the diagnosis of SAH must be entertained.

Non-contrast, thin-cut CT is the diagnostic modality of choice. Sensitivity approaches 100% for scans within the first 12 hours after symptom onset. False negatives can occur in patients who are anemic when CT scans cut wider than 3 mm, or with CT scans limited to artifact or patient movement. In patients whose CT scans are negative for SAH, lumbar puncture should be performed to look for bloody or xanthochromic cerebral spinous fluid.

Once diagnosed, early neurosurgical and neurological consultation must be obtained. The general management of these patients addresses 2 major objectives: identification of the bleeding site for possible intravascular or surgical intervention and treatment of the complications. The 2 most common complications are vasospasm and re-bleeding. Prior to the onset of vasospasm, all patients should receive prophylaxis with nimodipine within the first 12 hours. The typical dose is 60 mg PO or via NG tube for 21 days.

COMMENTARY

SAH is a devastating disease process which must be diagnosed early and accurately to help prevent some of the associated long-term morbidity and mortality. Up to 33% of patients diagnosed with SAH give a history of a severe headache within the preceding week. Often, these patients present for care during their "sentinel" leak, but unfortunately, the diagnosis was not ascertained.

Headache is a frequent presenting complaint in urgent care centers. Most of these patients have a non-life-threatening cause for their symptoms, and are appropriately treated with analgesics and antiemetics. A small subset of these patients is having a "sentinel" leak, or present at the onset of their SAH. It is in these urgent care patients, where the rapid evaluation and subsequent transfer can save a patient's life.

As in the previous article, the ability to recognize the high-risk, low-incidence urgent care conditions will save your patient's lives and lower your overall risk in what is otherwise a potentially high-risk practice. ■

CME Questions

23. A 70-year-old diabetic man presents with a gradual onset of L knee pain and swelling. On your exam you note that he has a temperature of 39.3 C and what appears to be an insect bite on his L ankle with surrounding erythema. Management of this patient includes all of the following except:

a. Knee joint aspiration
b. IV antibiotics
c. Tetanus shot
d. Prednisolone
e. Admission to the hospital

24. In the face of an acute low back strain, which of the following are appropriate recommendations for a patient?

a. take NSAIDS for symptom relief
b. bed rest for one week
c. apply heat to affected area
d. attempt specific back exercises for improved functioning
e. both a and c are appropriate
f. all of the above are appropriate

25. A patient presents with acute low back pain. The patient states that this is not the first time they have strained their back, although this time they note pain that radiates down the back of both of their legs and they feel like they have noted some difficulty urinating. What is the next step in evaluating and treating this patient?

a. start NSAIDs, Flexeril, Heat therapy, and follow up in 4 weeks
b. check plain films of lumbar spine, if normal, start conservative therapy
c. check urine analysis, if normal, start conservative therapy to treat low back pain
d. get an immediate MRI

Answers: 23. (d); 24. (e); 25. (d)

CME Objectives

The objectives of *Urgent Care Alert* are to:

• quickly recognize or increase index of suspicion for specific conditions;

• apply state-of-the-art therapeutic techniques to treat patients with particular problems; and

• identify both common and rare complications that may occur. ■