MINDFUL PRACTICE

Steroids for Lumbar Radiculopathy

BY JON O. EBBERT, M.D., AND ERIC G. TANGALOS, M.D.

The Problem

A 32-year-old man with a history of obesity (body mass index of 60 kg/m^2) presents with a 3-day history of back pain that he says began after he helped a friend pick up a car engine. He describes the pain as spasms in his right lower back, and reports pain radiating down his right leg to his right foot. He denies bowel or bladder dysfunction, fevers, low back trauma, lower-extremity weakness, or a history of cancer. He has had one previous episode of back pain with radicular symptoms that resolved with conservative management and pain control. He is employed by a large retailer as a stock person. He has been taking maximum doses of acetaminophen and ibuprofen without benefit. One of your colleagues was recently espousing the benefit he has observed with the use of oral steroids in patients with acute low back and radicular symptoms.

The Question

In patients with back pain and radicular symptoms, do oral steroids decrease the time to symptom resolution?

The Search

You log on to PubMed (www.pubmed.gov), enter the search terms "steroids" AND "low back pain," and limit the results to "randomized controlled trials." You find a relevant study. (See box at right.)

Our Critique

This was a well-conceived and well-conducted clinical trial. Follow-up assessments were performed by an individual not associated with the clinical care of the patient. The enrolled patient population is highly selected (13% of potentially eligible subjects were randomized), and generalizability is limited. As the authors point out, continuing improvement in disability beyond the 1-week period of expected efficacy suggests that steroids may improve the underlying disease pathophysiology. By the authors' own admission, the study appears to have been underpowered.

Clinical Decision

You prescribe oxycodone, but 3 days later the patient presents to the emergency department (ED) and receives a methylprednisolone (Medrol) dose pack with a dismissal diagnosis of "undertreated acute low back pain." The patient improves for 5 days and the pain recurs. Six weeks after the start of the radicular symptoms, the pain remains debilitating with narcotics and NSAIDs. Spinal MRI shows a large paracentral disk that narrows the lateral recess and displaces the transiting nerve roots posteriorly. He is referred to neurosurgery for evaluation for possible back surgery with an indication of intractable back pain.

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B.W. Friedman, et al.

A randomized placebo-controlled trial of single-dose IM corticosteroid for radicular low back pain. Spine 2008;33:E624-9. PubMed PMID: 18665021; PubMed Central PMCID: PMC2597789.

► **Design and Setting:** This randomized, placebo-controlled trial was done at the ED of Montefiore Medical Center in the Bronx, New York.

► **Subjects:** Subjects were eligible for enrollment if they presented to the ED within 7 days of onset of low back pain; were 21-50 years old; and had a positive straight leg raise (pain radiating below the knee when either leg is raised to an angle between 30 and 70 degrees). Subjects were excluded if they had other back pain in the preceding month; temperature higher than 37.9°C; neoplasm known to metastasize; recent direct blunt trauma to the back; any chronic pain syndrome; a history of spinal surgery; inflammatory arthritis; recent use of corticosteroids; daily or near-daily use of pain medication; pregnancy or lactation; or allergy to protocol medications.

► **Intervention:** Subjects were randomized to 160 mg intramuscular methylprednisolone (equivalent to ca. 20 mg of oral methylprednisolone or ca. 25 mg of prednisone) or placebo. All subjects received a "back pack" with naproxen, oxycodone, acetaminophen, and back pain instructions.

► **Outcomes:** The primary outcome was pain intensity after 1 month (worst pain in the previous 24 hours, rated on an 11-point scale). Secondary outcomes at 1 month included presence or absence of back pain in the previous 24 hours, need for analgesics in the previous 24 hours, presence or absence of back pain in the preceding week, score on the Roland-Morris-18 functional disability scale (which assesses impact on daily activities), rate of return to usual activities and work, and need to visit another medical provider. Pain intensity and functional disability were also assessed 1 week after ED discharge. Adverse medication effects were elicited by phone using an open-ended question 1 week after ED visit.

► **Results:** Of 637 patients approached, 82 were randomized. Subjects were comparable at baseline. At 1 month, pain scores were a mean of 1.3 lower in the steroid group (95% confidence interval –0.2 to 2.7). A trend toward less analgesia use in the previous 24 hours was seen in the steroid group (22% vs. 43%; odds ratio 0.39; 95% CI 0.14-1.1). Back pain in the previous week was less common with steroids (47% vs. 68%; OR 0.43; 95% CI 0.17-1.1), as was any disability on the Roland-Morris-18 scale (19% vs. 49%; OR 0.25; 95% CI 0.09-0.7). Reported adverse events were similar for both groups.

Imaging Optional in Knee OA Guidelines

BY DIANA MAHONEY

A confident diagnosis of knee osteoarthritis can be made without radiographic examination in adults older than 40 years based on criteria described in evidence-based recommendations to be published by the European League Against Rheumatism.

The criteria include usage-related knee pain, short-lived morning stiffness, functional limitation, and one or more "typical" examination findings, such as crepitus, restricted movement, and bony enlargement.

Clinical signs, symptoms, risk factors, and plain radiography are the cornerstones of the recommendations, which have a focus on clinical diagnosis that distinguishes them from the American College of Rheumatology criteria, said Weiya Zhang, Ph.D., of the University of Nottingham (England). He is lead author of the recommendations, which were presented at the annual European Congress of Rheumatology in Copenhagen and are slated for publication in an upcoming issue of the Annals of Rheumatic Disease.

The recommendations were developed by a task force of 17 osteoarthritis experts from 12 European countries. A systematic literature search was undertaken to identify the best available evidence, which was combined with clinical expertise in gauging the strength of each recommendation. Diagnostic accuracy was tested using multiple predictive models in two populations, including one from the Netherlands and one from the United Kingdom, Dr. Zhang explained.

The risk factors found to be strongly associated with knee OA in patients with knee pain include age older than 50 years, female sex, high body mass index, previous knee injury or malalignment, joint laxity, occupational or recreational usage, family history, and the presence of Heberden's nodes, the task force concluded.

Although plain radiography of the knee (including a weight-bearing view, a semiflexed view, and lateral and skyline views) remains the standard imaging modality for morphologic assessment of knee OA, imaging is an adjunct for diagnostic purposes. Other imaging modalities, such as MRI, sonography, and scintigraphy, are "seldom indicated for diagnosis of OA," according to the authors. Classic radiographic features "are focal joint space narrowing, osteophyte, subchondral bone sclerosis, and subchondral cysts."

Other recommendations cover the definition of knee OA, subsets of the disease, typical symptoms and signs, the use of laboratory tests, and differential diagnosis:

► Knee OA is a common, complex joint disorder that is characterized clinically by usage-related pain and functional limitation. The disorder entails focal cartilage loss, new bone formation, and involvement of all joint tissues—changes that are mirrored radiographically.

► Subsets of knee OA are associated with different risk factors and outcomes, and can be defined by compartmental involvement, bone response, the global pattern of OA, crystal presence, and the degree of inflammation. However, "the ability to discriminate subsets and the relevance for routine practice are unclear," the task force noted.

► The typical symptoms of knee OA are often episodic, variable in severity, and slow to change. Night pain and more persistent pain at rest may indicate advanced OA.

► In addition to the key findings indicative of knee OA (crepitus, restricted movement, and bony enlargement), additional features may include deformity, instability, periarticular or joint-line tenderness, and pain on patellofemoral compression.

► Such features as severe local inflammation, erythema, and progressive pain unrelated to usage should raise red flags, as they suggest sepsis, crystals, or serious bone pathology.

► Laboratory tests on blood, urine, or synovial fluid are not required for the diagnosis of knee OA, but they may be used to confirm or exclude other inflammatory conditions.

► Synovial fluid should be aspirated and analyzed if a palpable effusion is present, in order to confirm or exclude inflammatory disease and identify urate and calcium pyrophosphate crystals.

The authors acknowledged that the recommendations are limited because they were derived from literature based on different studies; the likelihood ratios pooled from the literature may be affected by multiple factors, including the number of studies, the populations considered, and the cutoff values selected; and there was no universally applicable reference standard for knee OA. Also, the recommendations could be different for "less typical" patients younger than age 40 years.

Dr. Zhang reported having no relevant financial relationships to disclose. ■