

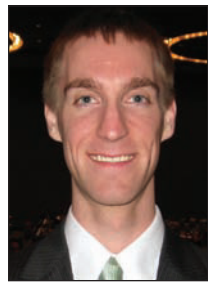
Steroid Use Ups Fractures After Renal Transplant

Early corticosteroid withdrawal regimens can reduce fracture rate.

BY BRUCE JANCIN

FROM THE ANNUAL MEETING OF THE AMERICAN SOCIETY FOR BONE AND MINERAL RESEARCH

SAN DIEGO – Early corticosteroid withdrawal after kidney transplantation is associated with a marked reduction in major fracture rate, according to an analysis of the United States Re-



Younger patients given steroids had a risk similar to older patients discharged without corticosteroids.

DR. NIKKEL

nal Data System database.

Indeed, discharge on corticosteroids was independently associated with a 45% increased risk of major fractures requiring hospitalization during a median follow-up of about 4 years, Dr. Lucas Nikkel reported at the meeting.

Early corticosteroid withdrawal regimens are gaining popularity at renal transplant centers as a means of reducing a wide range of immunosuppression-related side effects. The documented major clinical advantages include reduced rates of hyperlipidemia, posttransplant diabetes, cardiovascular events, infections, and cancer.

Until now, however, no study had examined whether early corticosteroid withdrawal regimens are also effective in reducing fracture incidence, noted Dr. Nikkel, who earned the ASBMR Young Investigator Award for his work.

Early corticosteroid withdrawal regimens consist of 4-7 days of high-dose methylprednisolone administered at the time of transplantation, followed by withdrawal of the drug in favor of long-term immunosuppression with calcineurin inhibitors and my-

VITALS

Major Finding: Discharge of kidney transplant recipients on corticosteroid-based immunosuppression was independently associated with a 45% increased risk in major fractures over the next 4 years compared to patients managed with early corticosteroid withdrawal while still in-hospital.

Data Source: Retrospective analysis of nearly 78,000 kidney transplant recipients in the United States Renal System database.

Disclosures: Dr. Nikkel declared having no financial conflicts.

cophenolic acid. More than 30% of kidney transplant recipients in the United States are now managed using such protocols.

Dr. Nikkel identified 77,625 adults in theUSRDS database who received a kidney transplant during 2000-2006. Pretransplant fracture rates were similar in the 11,178 patients not on steroids at discharge and the 66,447 who were.

The incidence of fractures requiring hospitalization during the follow-up period was 1.7% in patients with early corticosteroid withdrawal, significantly less than the 3.3% for those discharged on corticosteroid-based immunosuppression. The rate was 5.8 major fractures per 1,000 patient-years in the early steroid with-

drawal group, compared with 8.0 per 1,000 patient-years in those on corticosteroid-based immunosuppression. The increased fracture risk in patients discharged on steroids became apparent at 1 year of follow-up and significant at 2 years.

"It's noteworthy that patients in the youngest age group discharged on corticosteroids had a similar risk of fractures compared to the oldest patients discharged without corticosteroids," observed Dr. Nikkel, who is with Columbia University, New York.

In addition to discharge on steroids, other fracture risk factors identified in the study included older age, female gender, white race, pretransplant diabetes, a positive fracture history, and being on dialysis.

Since most fractures are treated on an outpatient basis, it is likely that these study results greatly underestimate the true fracture burden that is associated with kidney transplantation, he added.

Dr. Nikkel pointed out that his study was a retrospective analysis of observational data and said that prospective, long-term studies are needed to confirm the results.

Each year, more than 17,000 kidney transplants are performed in the United States, and more than 68,000 worldwide. Bone loss is high in these patients, especially in the first 18 months after transplantation.

Kidney transplant recipients have a 4.5-fold greater fracture risk than do the general population and a 30% greater risk than do hemodialysis patients during the first 3 years post transplant.

Audience members said that there is evidence to suggest calcineurin inhibitors adversely affect bone health as well, and they urged Dr. Nikkel to extend his follow-up to monitor this situation. ■

Prevention Strategies Can Reduce Falls in Older Adults

BY SHERRY BOSCHERT

EXPERT ANALYSIS FROM A MEETING ON OSTEOPOROSIS

SAN FRANCISCO – Falls are the main cause of hip fractures, and proven prevention strategies should be in every clinician's toolbox.

Physicians should ask patients aged 75 years or older if they have had any falls in the prior year or if they have balance or gait difficulties and observe them walking and getting into and out of a chair, said Dr. Edgar Pierluissi, who is medical director of the Acute Care for Elders Unit at San Francisco General Hospital.

A fall in the previous year increases the risk for a fall in the future by three- to fourfold.

Studies suggest that approximately 30% of U.S. adults over 65 years of age who are living in the community and half of adults over age 80 years will fall in the next year. Falls in adults aged 65 years or older cause injury in approximately 31%. Among those injured, 56% go to an emergency department and 38% visit a medical clinic, he said at the conference, sponsored by the University of California, San Francisco.

An exercise program with balance and strength training might be appropriate for older patients who've had only one or no falls and who don't have balance or gait difficulties, various guidelines sug-

gest. If a patient reports two or more falls or has balance or gait difficulties, do a "falls evaluation," an assessment of predisposing or precipitating factors that can point to appropriate preventive interventions, he said.

"We can perhaps make a difference" in many of the most common risk factors for falls that have been identified in 16 studies, Dr. Pierluissi said.

Muscle weakness quadruples the risk for a fall. A gait deficit, balance deficit, or use of an assistive device nearly triples the risk for falling. A visual deficit, arthritis, depression, or impaired activities of daily living more than double the risk for a fall. Cognitive impairment, use of some types of medications, or age older than 80 years each nearly doubles the risk for falling, he said.

To conduct a falls evaluation, get a good history of the patient's falls and their circumstances. Do a cardiovascular examination, medication review, neurological examination, and assessment for cognitive impairment. Assess gait, balance and mobility, muscle weakness, visual impairment, home hazards that might precipitate a fall, and the patient's perceived functional ability and fear re-

lated to falling (because many people who fear falling restrict their activity, which can lead to deconditioning and increased risk of falling).

A Cochrane Review of 111 randomized, controlled trials involving 55,303 participants identified effective interventions to reduce the risk of falling (Cochrane Database Syst. Rev. 2009 [doi:10.1002/14651858.CD007146.pub2]).

A number of forms of exercise reduced both the number of people who fell and the number of falls. Group tai chi exercise or individually prescribed exercise programs at home were effective. Multiple-component group exercise was effective if it targeted at least two of the following: strength, balance, flexibility, and endurance.

Conducting a multifactorial falls evaluation reduces the number of falls. In patients with visual impairment and a high risk of falling, assessing and modifying home hazards were effective, Dr. Pierluissi noted.

Withdrawing psychotropic medications and educating primary care physicians about the risk of falls association with drug therapy reduced the number

of falls but not the number who fell. In patients with cardioinhibitory carotid sinus hypersensitivity, cardiac pacing reduced the number of falls.

Vitamin D supplementation may reduce falls in people with low vitamin D levels, but it's unclear whether this helps people with adequate vitamin D levels. Other preventive strategies of unknown effectiveness include correction of visual deficiency, hormone replacement therapy, or modifying home hazards for people who have not fallen.

The Cochrane Review suggested that wearing hip protectors may provide some marginally significant benefit to frail, older adults in institutional care but not for older people who remain ambulant in the community, Dr. Pierluissi said.

One randomized, controlled trial of 1,042 residents in 37 nursing homes found a high rate of adherence to wearing hip protectors (74%) but these did not reduce the risk for hip fracture during the 20-month study. Residents served as their own controls by wearing hip protectors with padding on one hip but not the other. Investigators stopped the study early because of lack of efficacy, with hip fractures on 3.1% of the protected hips and 2.5% of unprotected hips, a statistically nonsignificant difference (JAMA 2007;298:413-22).

Dr. Pierluissi said that he had no relevant conflicts of interest. ■

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