New Tool Will Calculate Absolute Fracture Risk

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — A yet to be released tool developed by the World Health Organization should help physicians calculate an individual's absolute risk for bone fracture and provide a basis for counseling patients regarding treatment, experts said at a meeting on osteoporosis sponsored by the University of California, San Francisco.

The expected WHO model will estimate an individual's risk of developing a fragility fracture over the next decade, based on factors that may include age, bone mineral density of the femoral neck, a history of previous fracture, family history of fracture, smoking and alcohol use, steroid use, and the presence of rheumatoid arthritis.

At this point no one knows exactly which factors will be included in the model, said Steven T. Harris, M.D., clinical professor of medicine at the University of California, San Francisco.

Calculating absolute risk for fracture greatly assists therapeutic decision-making, he said. For example, a 2001 model looked at the 10-year probability of fractures in the hip, forearm, humerus, or spine based simply on age and bone density. A 45-year-old with a T score of –3 (which is consistent with osteoporosis) has about a 10% risk of fracture over the next 10 years, but the fracture risk increases to 30% in a 75-year-old with the same bone density.

The WHO model "is going to be far better than telling someone they have osteoporosis, giving them a prescription, and saying goodbye," Dr. Harris said. "Getting people engaged in conversation about what their risk is, and what can be done with contemporary treatment, is going to make therapy a lot more rational."

If a clinician could tell a 55-year-old patient who is osteopenic (with a T score of

–2) that the patient's absolute risk for fracture is 10% over the next 10 years, and that contemporary treatments could reduce that risk to 5%, that should help the patient decide whether the potential improvement is worth the cost or inconvenience associated with therapy.

Calculations of absolute risk also are likely to be used by insurers in the near future to decide whether to cover medical therapy for improving bone density. It may be that therapy for someone with a 20% risk of fracture will be covered, but patients with a 10% risk will have to pay for the medications themselves.

The new WHO index is due to be released "imminently," which probably means in the first half of 2006, Steven R. Cummings, M.D., said in a separate presentation at the meeting.

The WHO model 'is going to be far better than telling someone they have osteoporosis, giving them a prescription, and saying goodbye.'

He noted that the WHO's fracture risk index is based on data from about 60,000 women in 12 cohorts of patients, mostly Europeans, and needs to be validated in other populations, including that of the United States.

Some studies have been using the index to compare the value of bone density measurements with the value of other risk factors in predicting future fractures. Using the index alone without measuring bone density seems to be pretty good at predicting hip fractures, and is modestly valuable in predicting other types of osteoporotic fractures.

Having "an index of risk factors may be useful, particularly in places where you don't have bone density testing, or if you're deciding whether or not" to measure a patient's bone density, said Dr. Cummings, professor emeritus of epidemiology and biostatistics at the university and director of clinical research at the California Pacific Medical Center Research Institute.

Adding bone density measurement to other factors in the index strengthens the ability to predict hip fracture and mildly strengthens the ability to predict other fractures, but the opposite does not seem to be true. "It's not clear that adding risk factors, once you know the bone density, will substantially improve the clinical judgments you can make about treatment with medication," he said. ■