Assessing Bone Resorption Levels to Predict Skeletal Responses to HRT

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Osteoporosis is recognized as a significant contributor to morbidity and mortality in postmenopausal women. Several effective strategies, including calcium supplementation, weight-bearing exercise, and, most importantly, hormone replacement, have been developed to prevent or at least delay clinically significant bone loss.

Densitometry has been utilized increasingly for osteoporosis screening and can be quite useful for absolute measurements of bone mineral density; however, it has limitations in identifying patients at fracture risk, such as the hip and lumbar spine. The complementary use of urinary bone markers can be valuable in identifying patients at risk of fracture. Urinary bone markers are sensitive to bone collagen 1 and 2.

An additional role for urinary bone markers is for monitoring bone loss with GnRH agonist therapy. Prior to the initiation of therapy, bone resorption markers can establish a baseline measurement. The complementary use of urinary bone markers and densitometry at fracture risk sites, such as the hip and lumbar spine, can help guide the kind of therapy that is best suited for the individual patient. The use of urinary bone markers can be helpful in monitoring bone loss with GnRH agonist therapy.

AN EDUCATIONAL AND COUNSELING TOOL
Bone resorption markers can serve as important aids to patient counseling and compliance. Therapies such as alendronate and other antiresorptive agents can be expensive, and it is important for patients to understand the importance of taking these medications correctly. Therapists can use bone resorption markers to determine whether the patient is taking her medication correctly, and, of course, whether bone loss is slowing (see Case 3).

DISCUSSION
Since the use of urinary bone markers adds costs to the delivery of health care, it becomes incumbent on the medical community to evaluate the value of these tests in specific clinical settings. It is known that bone mass, or the lack of it, predicts fracture risk, but the complementary use of urinary bone markers can be valuable in identifying patients at risk of fracture. It is known that bone mass, or the lack of it, predicts fracture risk, and urinary bone markers can identify patients at risk of fracture.

One of the problems with bone density measurement has been the variability of results and interpretation. To address this problem, all manufacturers have used the same normative data. As the population ages, the number of women at risk for osteoporosis will continue to increase. The use of urinary bone markers can help identify patients at risk of fracture and identify patients who may benefit from antiresorptive therapy.

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Urinary N-telopeptide of type I collagen monitors therapeutic effect and predicts response of bone
turnover during ovarian suppression and indicates individually variable estradiol threshold for bone

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