PREVENTION OF OSTEOPOROSIS

TO THE EDITOR:

We greatly appreciated the Clinical Inquiries review on prevention and treatment of osteoporosis by Kendra Schwartz, MD, MSPH.[1] A crucial issue that is rarely discussed is that the only dose of vitamin D that has been shown to be effective in preventing vertebral and hip fractures in the elderly is at least 700 IU per day.[2-4] Unfortunately, studies showing a benefit of the bisphosphonates compared active drug against a control group taking less than 700 IU per day of vitamin D (usually 400 IU per day). Thus, it is possible that the demonstrated benefit of the bisphosphonate medications would be greatly reduced or eliminated if the control group had simply been taking an additional dose of vitamin D daily. Indeed, given the effectiveness of both vitamin D at the 700-IU dose and calcium supplementation, combined with their low risk and low cost, it makes sense to recommend this combination routinely for all women at menopause and thus possibly to reduce markedly the need for further screening or prevention with more expensive medications.

Our greatest concern is that few clinicians recognize the significance of this issue and infrequently recommend adequate doses of vitamin D. Since most clinical trials are funded by the pharmaceutical industry, not much benefit is likely to be gained by showing that an adequate dose of vitamin D is at least as effective as an expensive medication. If we don't ask the right questions, we'll never get the right answers.

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DR SCHWARTZ RESPONDED:

I thank Drs Slawson and Shaughnessy for their comments regarding the benefit of vitamin D and calcium in the prevention and treatment of osteoporotic fractures. Two randomized controlled trials (RCTs) have indeed shown that vitamin D dosages in the 700- to 800-IU range given with calcium decrease nonvertebral fracture risk.[2,3] However, vertebral fracture risk was not an outcome in either RCT; thus, there is insufficient evidence to support the hypothesis that vitamin D is effective in reducing such fractures.

Chapuy et al,[2,3] reporting on a single study of very elderly women living in nursing homes, found the risk of hip fracture was significantly reduced. This encouraging finding may not be generalizable to most primary care populations. Dawson-Hughes et al[4] studied community-dwelling men and women aged 65 years and older and found a significant reduction in nonvertebral fracture risk. Their sample is more similar to primary care patients; however, hip fracture protection was not demonstrated.

Together, the 2 studies indicate that vitamin D at doses higher than are usually recommended, when taken along with calcium, offer nonvertebral fracture risk protection. Yet it is difficult to say how that protection compares with the protection afforded by bisphosphonate medications without performing a head-to-head trial. Such a study design is the "right question" to answer Drs Slawson and Shaughnessy's assertion.

Until such a trial is performed—there are funding sources other than pharmaceutical companies—it will be wise for clinicians to engage patients in discussions of existing evidence. Taking high-dose vitamin D with calcium is not without risk. Adverse effects, although rare, include nausea, diarrhea, epigastric pain, hypercalcemia, and renal calculi. The benefit compared with that of effective medications remains unknown.

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REFERENCES

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