Osteoporosis guidelines miss big picture

Infants, all with low bone density, don’t break bones. The bones bend, because the structural component is mainly collagen I and III, “ropes” along which bone mineral builds and rebuilds after osteoclasts remove bone with microcracks. The authors of the recently published guidelines suggest that they no longer focus on treating bone mineral density, but that is exactly what they do, as per their specified pharmacologic-based search-and-exclusion criteria.1

Apart from welcome references to the calcium management prohormone vitamin D3 (up to 2000 IU/d requires no monitoring), the emphasis is on bisphosphonates, a class of drug that “disables” osteoclasts, thereby mimicking their terrible role in osteopetrosis.2

Obviously, bone density affects spinal compression fractures (that are 80% asymptomatic); however, simply increasing density may make bones more brittle unless the toughness factor, collagen, is simultaneously improved. The absence of annual “numbers needed to treat” in the guidelines for spine and particularly hip fractures from bisphosphonates is especially disturbing.

Largely excluded from the search criteria are the word collagen and any of the vitamins and minerals that affect and control collagen synthesis and quality (vitamin C, the homocysteine-lowering B vitamins, B6, B12, folic acid, iron, and copper and iron).3 Several of these vitamins (and homocysteine levels that are needlessly high because of low vitamin intake) are risk factors for fracture. For example, a placebo-controlled homocysteine-lowering study using only two B vitamins found an 80% reduction in hip fractures in two years, likely as a result of improved collagen quality since bone density and falls were identical.1

The guidelines need to be expanded: the focus on just bone density misses an important part of the picture.

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References