Genistein improves BMD in osteopenic postmenopausal women

Hormone replacement therapy successfully reduces postmenopausal bone loss, but carries an increased risk of cancer and vascular events. Observational studies suggest that consumption of high amounts of phytoestrogens reduces osteoporosis risk. Genistein is a component of soya that is similar to 17β-estradiol, and might have protective effects against bone loss according to a number of small, short-term studies. Because of its differential affinity for estrogen receptors, genistein has greater activity in bone than in reproductive tissue. Marini *et al.*, therefore, conducted a 2-year randomized trial of genistein versus placebo in 389 osteopenic postmenopausal women.

After 2 years, participants who received genistein (54 mg/day) had increased BMD at the femoral neck and lumbar spine (change, +0.035 g/cm^2 and +0.049 g/cm^2, respectively), whereas these values decreased in participants who received placebo (–0.037 g/cm^2 and –0.053 g/cm^2, respectively, $P<0.001$). Genistein use decreased urinary levels of markers of bone resorption and increased levels of markers of new bone formation compared with placebo. Genistein had no effect on endometrial thickness, and reduced the mean incidence of hot flashes per day compared with placebo (1.7 vs 3.9, $P<0.001$). Withdrawals due to adverse events totaled 37 (19%) in the genistein group compared with 15 (8%) in the placebo group ($P=0.002$); all adverse events were gastrointestinal (constipation, dyspepsia, vomiting, and epigastric or abdominal pain).

The authors conclude that genistein improves BMD and bone-turnover marker levels in osteopenic postmenopausal women. Studies to assess the effect of genistein on bone fracture risk are warranted.

Original article Marini H *et al.* (2007) Effects of the phytoestrogen genistein on bone metabolism in osteopenic postmenopausal women: a randomized trial. *Ann Intern Med* **146:** 839–847

Depressive symptoms are associated with self-care non-adherence in type 2 diabetics

Growing evidence suggests that depression negatively affects adherence to self-care behaviors (e.g. diet control, exercise, and administration of medication) in patients with type 2 diabetes. Gonzalez and colleagues aimed to characterize the effects of varying severity of depressive symptoms on self-care practices in these patients.

This statistical analysis included 879 of 909 enrolled patients with type 2 diabetes. Depression symptoms were assessed using the Harvard Department of Psychiatry/National Depression Screening Day Scale (HANDS, scale 0–30), with a score ≥9 representing probable major depression over the previous 2 weeks. Self-care adherence was measured with the Summary of Diabetes Self-Care Activities (SDSCA) Questionnaire, which assesses 7-day performance in five domains (diet, exercise, blood glucose monitoring, foot care and medication adherence).

Probable major depression was recorded in 19.3% of patients, and 66.5% of patients showed some depressive symptoms (HANDS score 1–8). Major depression was associated with a significant decrease in adherence to diet, exercise schedule and blood glucose monitoring; patients with probable major depression were also 2.31 times more likely to miss a medication than the other participants ($P<0.001$). Furthermore, in patients with some depressive symptoms (but not major depression), increasing symptom severity was associated with a significant incremental increase in non-adherence with diet, exercise and medication regimens.

The authors conclude that poor adherence to self-care behaviors is associated with minor depressive symptoms—not just in cases of major clinical depression. Treatment of these minor symptoms might considerably improve self-care of diabetes.

Original article Gonzalez JS *et al.* (2007) Depression, self-care, and medication adherence in type 2 diabetes: relationships across the full range of symptom severity. *Diabetes Care* [doi: 10.2337/dc07-0158]