

OSTEOSCOOP

News on current events in osteoporosis and rheumatology

Associations between the metabolic syndrome and bone health in older men and women

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Metabolic syndrome is defined as a cluster of risk factors that are associated with diabetes, central obesity, and increased risk of cardiovascular disease. The 2001 National Cholesterol Education Program-Adult Treatment Panel III (NCEP-ATP III) definition requires the presence of at least 3 of 5 of the following categorically defined risk factors: abdominal obesity (waist circumference greater than 102 cm in men or greater than 88 cm in women), high triglycerides (150 mg/dl or greater), low HDL cholesterol (less than 40 mg/dL in men or less than 50 mg/dL in women), hypertension (130/85 mm Hg or greater), and hyperglycemia (110 mg/dL or greater). Metabolic syndrome is associated with cardiovascular disease morbidity. The association between each of these risk factors and osteoporosis has been previously studied, with contradictory results. A recent study [1] used multivariate regression models to examine the cross-sectional associations of MS defined by NCEP-ATP III criteria with bone mineral density (BMD) and osteoporosis, and the longitudinal association of MS with fractures in 420 men and 676 women from the Rancho Bernardo Study.

Prevalence of MS at baseline was 23.5% in men and 18.2% in women. In age-adjusted analyses, men and women with MS had higher total hip BMD when compared with those without MS. Men but not women with MS also had higher BMD at femoral neck. After adjusting for body mass index (BMI), these associations were reversed, such that MS was associated with lower and not higher BMD. After an average follow up of 2 years, incident clinical fractures were 2.6 times more likely to occur in participants with metabolic syndrome as compared with participants without metabolic syndrome.

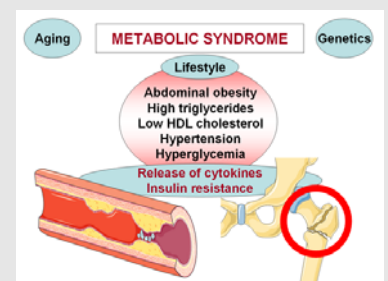
The authors conclude that incidence of osteoporotic nonvertebral fractures was higher in participants with MS. MS may be another risk factor for osteoporotic fractures. The association of MS with higher BMD was explained by the higher BMI in those with MS.

1. von Muhle D et al. Osteoporosis int. 2007;18:1337-1344

Metabolic syndrome and bone health in older men and women

Metabolic syndrome associates abdominal obesity, lipid abnormalities with high triglycerides and low HDL cholesterol, hypertension, and hyperglycemia. Metabolic syndrome is associated with cardiovascular disease morbidity. Because increased body mass index was reported to be associated with increased bone mineral density, the question of whether or not metabolic syndrome is associated with osteoporosis and fractures was recently addressed.

After adjusting for body mass index (BMI), metabolic syndrome was associated with lower and not higher BMD. After an average follow up of 2 years, incident clinical fractures were 2.6 times more likely to occur in participants with metabolic syndrome as compared to participants without metabolic syndrome.



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