GENDER-SPECIFIC ASSOCIATION OF LOWER BONE MINERAL DENSITY WITH AORTIC VALVE CALCIUM: THE MULTI ETHNIC STUDY OF ATHEROSCLEROSIS (MESA) STUDY

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Prevention: Gender, Race/Ethnicity, and Preventive Interventions
Abstract Category: 20. Prevention: Clinical
Presentation Number: 1219-137

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Background: Aortic valvular calcification (AVC) is a predictor of morbidity and mortality. In vitro and clinical studies suggest an inverse relationship between bone mineral density (BMD) and vascular calcification, but the relationship between BMD and AVC remains unexamined.

Methods: MESA's observational prospective cohort of individuals without baseline heart disease had lumbar BMD and AVC Agatston scores measured at baseline and 2-4 years later. Associations between AVC prevalence and incidence, BMD, and traditional cardiovascular and bone loss risk factors were calculated by logistic and tobit regression models with the highest BMD quartile as reference.

Results: BMD and AVC measurements were available in 1017 males and 1011 females among MESA's 6814 participants, with mean age 62 years in both groups. AVC prevalence and incidence in males were 20.6% and 18.9/1000 person-years, and in females 12.6% and 14.4/1000 p-y (p < .05 for heterogeneity between genders). Adjusted odds ratios for AVC prevalence and incidence were 1.57 and 4.58 for men in the first compared to fourth BMD quartile (p < .01 for trend). This relationship was not observed in women (Graph).

Conclusion: Lower BMD is independently and inversely related to prevalent and incident AVC in males but surprisingly not in females. Alternate mechanism(s) for BMD loss or AVC development in females may attenuate BMD and AVC associations seen in males. Further mechanistic and outcome studies are necessary, especially focusing on osteopenic men.