

P73. Adiposity measures and bone mineral density are associated with ovarian volume after the menopausal transition

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Context: Age and the menopausal status are determinants of ovarian volume. However, evidence regarding the association between ovarian volume and anthropometric indices remains conflicting.

Objective: The present study aimed to assess the association between ovarian volume and demographic/anthropometric parameters, as well as sex hormones and bone mineral density (BMD) in postmenopausal women.

Methods: This cross-sectional study evaluated the impact of potential predictors of ovarian volume in the postmenopausal population.

Patients: 161 healthy postmenopausal women

Interventions: 1) Fasting venous blood samples were obtained for biochemical and hormonal assessment; 2) estimation of anthropometric parameters included the body mass index (BMI) as well as the waist-to-hip ratio (WHR); 3) transvaginal ultrasonography to estimate ovarian volume; 4) BMD was measured in the femoral neck (FN) and the lumbar spine (LS) using DXA.

Main outcome measures: Predictive ability of sex hormones, BMD as well as anthropometric/demographic parameters with respect to the average ovarian volume in postmenopausal women.

Results: Mean ovarian volume increased linearly with increasing quartiles of BMI (Q1:0.985±0.25, Q2: 1.11±0.29, Q3: 1.07±0.28, Q4: 1.19±0.38, p-value for linear trend 0.013). Ovarian volume correlated positively with BMI (r=0.128, p-value=0.038), FN BMD (r=0.233, p-value=0.003), FN T-score (r=0.223, p-value=0.004) and FN Z-score (r=0.171, p-value=0.027). Multivariate analysis showed that ovarian volume was predicted by WHR (b-coefficient=0.157, p-value=0.047), independently of age, BMI and circulating sex hormones. Finally, FN BMD was predicted by ovarian volume, independently of age, menopausal age and BMI.

Conclusion: Ovarian volume was positively and independently associated with adiposity indexes and femoral bone mineral density in postmenopausal women, Insulin resistance may mediate these results. The significance of these findings should be assessed in larger prospective studies.

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