Objective: Metabolic risk factors clustering in women with the polycystic ovary syndrome (PCOS) may increase the risk of cardiovascular disease (CVD). Menopause per se may present an additional CVD risk factor. However, the association between PCOS in postmenopausal women and cardiovascular risk has not been adequately investigated. We aimed to evaluate the effect of PCOS on markers of subclinical atherosclerosis in nondiabetic postmenopausal women.

Methods: A total of 286 postmenopausal women with intact ovaries were evaluated for the presence of the PCOS. The putative phenotype was defined if three of the following criteria were present: current hyperandrogenism or history of clinical androgen excess, insulin resistance, central obesity as well as history of infertility and irregular menses. We compared traditional CVD risk factors, as well as indices of arterial structure and function, namely intima-media thickness, flow-mediated dilation, pulse wave velocity (PWV) and augmentation index between women with a PCOS phenotype and the rest of the sample, who served as controls.

Results: Women with the PCOS phenotype (N=43) exhibited an adverse lipidemic profile and higher SBP than controls. Significantly higher values of PWV were observed in PCOS cases compared to controls (9.46±1.74 vs. 8.60±1.51m/s, P=0.001, univariate). Multivariate regression analysis showed that the PCOS phenotype, age and SBP were the only independent predictors of PWV.

Conclusion: Arterial stiffness is increased in asymptomatic, nondiabetic women with a putative PCOS phenotype, independently of age, blood pressure and BMI. This might present one mechanism through which PCOS increases the risk of CVD and hypertension later in life.