Arterial Stiffness and Coronary Artery Disease

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Abstract

Although there have been marked improvements in both diagnostic and therapeutic interventions over several decades, coronary artery disease (CAD) remains the leading cause of death worldwide. Intensive modification of classic risk factors, such as hypertension, diabetes mellitus, dyslipidemia and cigarette smoking, has significantly reduced the development of CAD, however, the high prevalence of residual cardiovascular events requires improvement in the identification and risk stratification strategies. In this context, arterial stiffness, which reflects arterial aging, damage and arteriosclerosis, has emerged as an important risk factor for cardiovascular disease. The measurements of arterial stiffness are easy to make using several noninvasive methods, such as pulse wave velocity. The clinical utility of the measures has been validated in many prior studies. Recent evidence has suggested that the measures of arterial stiffness are correlated with the presence and extent of CAD. More important, increased arterial stiffness is an independent predictor of CAD-related morbidity and mortality beyond classic risk factors. Considering its noninvasiveness, simplicity and reliability, arterial stiffness could serve as a useful marker of CAD, and help identify high-risk patients who may benefit from more aggressive management.

Keywords

Arterial stiffness; coronary artery disease.