

Prevention through imaging: Current knowledge and perspectives

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Abstract

The impact of cardiovascular imaging on cardiovascular prevention and risk assessment has substantially increased over the last few years, mainly due to the amount of relevant information that imaging modalities now provide. This review discusses different aspects of cardiovascular imaging with respect to prevention and risk assessment, including: (i) the role of carotid intima-media thickness as a risk marker and surrogate marker of atherosclerosis; (ii) the relevance of quantifying coronary calcium by computed tomography and the added value of computed tomography angiography; (iii) the ability of echocardiography to detect subclinical abnormalities early in the natural history of a disease process, potentially allowing early treatment and thus interrupting the cascade of events that can lead to adverse outcomes; (iv) the use of cardiac hybrid imaging as a way to obtain the advantages of combining methods used simultaneously; and (v) the detection of vulnerable plaque and the role of some of the invasive imaging modalities such as intravascular ultrasound or optical coherence tomography. Further research is needed to document whether these approaches will prove clinically effective and have a positive cost/benefit ratio in the management and risk assessment of heart disease. This will likely represent an important step forward in the field of cardiovascular prevention © 2013, AICH.

Keywords

Cardiac hybrid imaging, Cardiovascular prevention, Coronary artery disease, CT angiography, Echocardiography, Heart failure, MRI, Myocardial perfusion imaging