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Subclinical coronary artery disease in veteran athletes: is a new pre-participation methodology required?

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Topic(s):
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Citation:

Objectives: Pre-participation evaluation of veteran athletes should focus on accurate cardiovascular (CV) risk stratification and subclinical detection of coronary artery disease (CAD), which is the main cause of sudden cardiac death in this population. We aimed to investigate the effectiveness of current pre-participation methodology used to identify veteran athletes with high coronary atherosclerotic burden.

Methods: A total of 105 male asymptomatic athletes aged =40 years old, with low to moderate CV risk (SCORE <5%) and trained =4 hours/week during at least the last 5 years, were studied. The screening protocol included clinical evaluation, electrocardiogram, transthoracic echocardiogram and exercise testing. Cardiac computed tomography (CT) was performed to detect CAD, defined as a high atherosclerotic burden according coronary artery calcium (CAC) score and angiography (CCTA).

Results: The majority of the athletes (N=88) were involved in endurance sports, with median volume of exercise of 66 [44; 103]METs/h/week. Exercise testing was abnormal in 13 (12.4%) athletes, six (5.7%) with electrocardiographic criteria for myocardial ischemia and seven (6.7%) with exercise-induced ventricular arrhythmias. A high coronary atherosclerotic burden was present in 27 (25.7%) athletes, of which 11 (40.7%) had CV risk factors, and six had abnormal exercise tests, including three that were positive for myocardial ischemia.

Conclusions: Conventional methodology used in pre-participation evaluation of veteran athletes, based on clinical CV risk factors and exercise testing, was poor at identifying significant subclinical CAD. The inclusion of more objective markers, particularly data derived from cardiac CT, is promising for more accurate CV risk stratification of these athletes.
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