LONG-TERM SIGNIFICANCE OF EXERCISE-INDUCED VENTRICULAR TACHYARRHYTHMIAS IN ATHLETES WITHOUT CARDIOVASCULAR ABNORMALITIES

ACC Poster Contributions
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Authors: Luisa Verdile, Emanuele Guerra, Elvira De Blasiis, Roberto Ciardo, Filippo Quattrini, Fernando M. Di Paolo, Cataldo Pisicchio, Barbara Di Giacinto, Alessandro Biffi, Antonio Pelliccia, Institute of Sport Medicine and Science, Roma, Italy

Background: Sudden death in athletes is presumably related to life-threatening ventricular arrhythmias occurring during sport activities. There are few data on clinical significance and risk for ventricular arrhythmias induced by exercise in athletes without apparent structural heart disease. To assess long-term clinical significance of exercise-induced tachyarrhythmias in athletes.

Methods: We selected 12 athletes without cardiovascular abnormalities and frequent and/or complex ventricular arrhythmias. Selection criteria were the occurrence of ≥10 premature ventricular depolarization (PVDs) and/or ≥ 1 couplet induced by exercise test. The follow-up period was 9.18 ± 4.66 years during which the athletes underwent clinical evaluations, ECG and color-doppler echocardiography, 24-hours Holter monitoring and selectively, electrophysiologic study and cardiac magnetic resonance with late enhancement.

Results: During the follow-up no athlete developed symptoms, events or evidence of cardiomyopathies. In 6 athletes (50%) the arrhythmias disappeared (in 2 athletes) or was substantially reduced (in 4). In 3 athletes arrhythmia was unchanged and in 2 worsened. These latter athletes underwent successful radio-frequency ablation to allow resumption of athletic activity. A right ventricular outflow tract PVDs morphology was documented in 8 athletes (67%).

Conclusions: Exercise induced ventricular arrhythmias in athletes without evidence of structural heart disease are associated with a good clinical outcome and with a trend of reduction over 9 years of follow-up.