Abstract: P1379

Management of young athletes with ventricular arrhythmias

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Introduction. Ventricular arrhythmias (VAs) is an often finding in young athletes.

The aim of study was to evaluate risk of sudden cardiac death (SCD) using noninvasive cardiac examinations in young athletes to have VAs.

Methods. One hundred thirty six athletes (mean age 13.8 ± 4 years, male/female ratio 96/40 = 2.4) were evaluated. The study protocol included electrocardiography (ECG), exercise testing, echocardiography, 24-hour Holter monitoring, and in selected cases contrast-enhanced cardiac magnetic resonance imaging.

Results. VAs were detected in 22.7% (n=31) of subjects. Premature ventricular complexes (PVCs) during Holter monitoring averaged 1606±2500 per day, predominantly monomorphic (83.8%). Single PVCs were detected in all, ventricular couplets were in 4 (12.9%), nonsustained idioventricular rhythm was in 2 (6.4%), nonsustained ventricular tachycardia in 1. ejection fractions were normal (mean 72.5 ± 4.6%) in all. The most important echocardiographic findings were additional chord of the left ventricular in 17 patients (54.8%), mitral valve prolapse in 10 (32.2%), the initial hypertrophy of the interventricular septum, and open oval window in 2 athletes (6.4%).

All patients performed submaximal exercise testing using the standard Bruce protocol. All patients have high workload during exercise testing (mean 12.4±1.7 ??/s). VAs were detected during exercise testing in 6.4% (n=2) of athletes. PVCs were not detected during exercise in 93.6% (n=29) of subjects. The results of cardiac magnetic resonance imaging were normal.

Conclusions. From our cohort, in 2 subjects were detected stress-induced VAs. Our study demonstrated that the research for a morphologic substrate in athletes with VAs is usually the primary goal, determining both the prognosis and recommendation for sports participation. Most VAs are not associated with underlying cardiac abnormalities and a low risk of SCD. Further investigation is required to clarify causes of VAs and to evaluate the risk of SCD.