PRELIMINARY RESULTS FROM ITALIAN ELECTROCARDIOGRAPHIC SCREENING IN 10,000 HEALTHY YOUNG STUDENTS

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Background: In the Italian population (<35 years old), sudden cardiac death (SCD) incidence is 1000/Year. Only the young competitive athletes are routinely screened in order to prevent SCD. The aim of our study, performing an electrocardiographic screening in high school students (16-20 years old), is to estimate the prevalence of abnormal electrocardiographic findings and in particular identifying the young at risk of SCD.

Methods: From October 2010 to October 2012 we enrolled 10019 young students, from 16 to 20 years old (median age 18.2 ±0.8SD years). Students with known heart disease were excluded. All students underwent to electrocardiographic (EKG) evaluation. All EKGs were transmitted to the reporting center for the off-line analysis.

Results: The EKG analysis showed in 21.2% of the students (2124, 958 males and 1166 females) the presence of a pathologic EKG: supraventricular arrhythmias 3.25%; ventricular arrhythmias 1.08%; atrio-Ventricular Block 0.91%; fascicular block 4.50%; right / left bundle branch block 1.55%; ventricular pre-excitation 3.69%; atrial enlargement 0.98%; long / short QT 0.61%; ventricular repolarization anomalies 4.50%; Signs of left ventricular hypertrophy 0.47%; junctional rhythm 0.07%; Coronary Sinus Rhythm 0.22%; Brugada EKG pattern 2.09%.

Conclusions: In our observational study an high percent of students presented a pathologic ECG(21.2%). In our knowledge, this is the first prospective observational study to estimate the prevalence of pathologic ECG in a young general healthy population. The follow-up analysis will explain the clinical significance of these findings.