High ST Take-Off in Hypertrophic Cardiomyopathy

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High ST take off (HST) is associated with increased incidence of severe arrhythmic events in healthy individuals. HST is common in hypertrophic cardiomyopathy (HCM) but its significance in this disease is not well established.

We studied the clinical associations of HST in a well characterized cohort of HCM patients from our cardiomyopathy clinic. Our database comprised 210 patients diagnosed according to the established criteria; 31 were excluded from the analysis because of paced rhythm or LBBB. HST was found in 67 (37%) patients, most commonly in V1-3 precordial leads (n=55). HST was associated with male sex (82 vs 63%, p=0.003), earlier age of disease onset and age at evaluation (32±19 vs 39±18 and 45±19 vs 52±18, respectively; p=0.01 each). Family history of sudden death was slightly less common in HST group (19 vs 31%, p=0.08) while family history of HCM was equally prevalent. ECG with HST more commonly fulfilled voltage criteria for LVH (68 vs 38% in those without HST, p<0.0001) but did not differ in prevalence of Q waves or conduction abnormalities. Patients with HST did not differ in their maximal wall thickness, ejection fraction or outflow obstruction, but more often had the concentric variant of left ventricular hypertrophy (p=0.002). Angina pectoris, heart failure and cardiac events were equally distributed in HST and non-HST groups. There were no differences in non-sustained ventricular tachycardia (16 vs 24%) or severe ventricular arrhythmia (3 vs 5%) in HST vs non-HST groups. Secondary analysis according to ECG lead territory did not identify increased risk in any subgroup including those with inferior or anterolateral lead HST (11 patients in each category).

We conclude that HST is common in young males with HCM. It is associated with increased ECG voltage but does not confer an increased risk of arrhythmia or other HCM complications.