Classification of J point elevation in a healthy populaton

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Introduction The controversial term early repolarisation (ER), has generally been considered benign until recently when it has been associated with life threatening arrhythmias. There has been much confusion around defining J point elevation in relation to ER. This study aims to explore different definitions of J-point elevation, and hence ER, and determine their prevalence in an apparently-healthy Caucasian population.

Methods ECGs were recorded from 1,496 apparently healthy Caucasian adults and analysed by the Glasgow Program. Average beats were reviewed manually together with automated measurements. Five types of J point elevation were defined. Type 1 was the peak of a terminal QRS notch pkQRSn = 0.1mV and STj (QRS end) = 0.1mV. Type 2 was pkQRSn = 0.1mV and STj $<$ 0.1mV. Type 3 was the onset of a terminal QRS slur onQRSs = 0.1mV and STj = 0.1mV while type 4 was onQRSs = 0.1mV and STj $<$ 0.1mV. Type 5 was STj = 0.1mV only, with no QRS slurring or notching.

Results 859 males and 637 females (aged 18-82 years) were studied. Type 1 was present in two contiguous leads other than V1-V3 in 16 (1.1%). Similarly, Type 2 was present in 101 (6.8%). Types 3 and 4 were present in 6 (0.4%) and 235 (15.7%). 71 (4.7%) had a mixture of both Type 1 and Type 2 in at least 2 contiguous leads. Type 5 was present in 9 (0.6%). Across all age groups, all types of J point elevation were more prevalent in males than females ($p < 0.0001$).

Conclusion This is the first report, in an apparently healthy population, of the widely varying prevalence of so called J point elevation on the basis of different definitions. This finding has important implications for studies considering the prognostic value of what is currently termed early repolarisation.