

The prevalence and clinical importance of isolated inverted T wave in precordial leads

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Abstract

Introduction: Isolated precordial inverted T-wave (IPITW) is a challenging finding on electrocardiogram (ECG) due to a wide range of differential diagnoses ranging from a normal finding to coronary heart disease. The aim of this study was to determine the overall prevalence of IPITW and its underlying causes along with ECG mapping. **Materials and methods:** The MASHAD cohort study participants (phase II) were screened for the presence of IPITW on the ECG. Demographic and clinical information of patients with IPITW extracted from the cohort study archive. ECG mapping and trans-thoracic echocardiography were performed on randomly selected 40 participants with IPITW. These participants were divided into symptomatic and asymptomatic groups. **Results:** The prevalence of IPITW was 1.56%. Of the selected 40 participants (9, 22.5% male and 31, 77.5% female), IPITW was mostly present in V3 and V4 leads (77.5% in each case). There was no significant difference in the number of leads with IPITW between I, M and N patterns ($p = 0.051$). Hypertension, ischemic heart disease (IHD) and heart failure (HF) were the least prevalent among N pattern group. The prevalence of heart failure was the highest in M pattern group (60%). Pattern I was associated with 525.2-fold increased likelihood of IHD compared to the N pattern. I pattern had the highest sensitivity (68.42%), specificity (90.48%), positive (86.67%) and negative (76.0 %) predictive values in IHD diagnosis. **Conclusions:** IPITW in the presence of I pattern in ECG mapping can be an indicator for IHD.

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