Abstract

In animal models the evaluation of myocardial infarct size in vivo and its relation to the actual lesion found post mortem is still a challenge. The purpose of the current study was to address if the conventional electrocardiogram (ECG) and/or echocardiogram (ECHO) could be used to adequately predict the size of the infarct in rats. Wistar rats were infarcted by left coronary ligation and then ECG, ECHO and histopathology were performed at 1, 7 and 28 days after surgery. Correlation between infarct size by histology and Q wave amplitude in lead L1 was only found when ECGs were performed one day post-surgery. Left ventricular diastolic and systolic dimensions correlated with infarct size by ECHO on day 7 post-infarction. On days 7 and 28 post-infarction, ejection indexes estimated by M-mode also correlated with infarct size. In summary we show that conventional ECG and ECHO methods can be used to estimate infarct size in rats. Our data suggest that the 7-day interval is actually the most accurate for estimation of infarct size by ECHO.

Keywords

myocardial infarction, rats, electrocardiogram, echocardiogram, infarct size.