

One-year outcome of the rule-out group according to the 0-h /1-hour algorithm with suspected myocardial infarction in Asian countries

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Background/Introduction: A rapid rule-out or rule-in protocol based on the 0-h/1-hour algorithm using high-sensitivity cardiac troponin T (hs-cTnT) is recommended by the European Society of Cardiology (ESC). Around 40–50% were stratified into “rule-out” group, and their 30-days prognosis was excellent. However, the one-year prognosis is uncertain. We aimed to better characterize these patients.

Methods: This study was a prospective, multi-center, observational study of patients with suspected non-ST elevation acute coronary syndrome (NSTEMI-ACS) admitted to 5 hospitals in Japan and Taiwan from 2014 November to 2018 December, respectively.

All patients underwent a clinical assessment that included medical history, physical examination, 12-lead ECG, standard blood test, chest radiography. Exclusion criteria were ST-elevated myocardial infarction, chronic kidney disease (serum creatinine more than 3 mg/dL) and congestive heart failure, arrhythmia, or infection disease. The patients were divided into three groups according to the algorithm; “rule-out”, “observe” and “rule-in”. The final diagnosis was then adjudicated by 2 independent cardiologists using all available information, including coronary angiography, coronary

computed tomography, stress electrocardiography and follow-up data. The presence of acute myocardial infarction (AMI) was defined according to the Fourth Universal Definition of Myocardial Infarction. After hospital discharge patients were followed after one-year by telephone or in written form. Major adverse cardiovascular events (including death myocardial infarction, coronary artery bypass grafting, percutaneous coronary intervention (PCI)) were recorded by establishing contact with the patient and the family physicians. The primary prognosis end point was all-cause mortality.

Results: Of the 1,187 patients were analyzed after exclusion. The prevalence rate of AMI was 16.1%. According to the algorithm, 42% (n=493) of patients were assigned to “rule-out” group and had no AMI nor death. The most common final adjudicated diagnoses were atypical chest pain (80%), gallstone attack (3%) and vasospastic angina pectoris (2%). All patients with unstable angina (4.7%) underwent PCI.

Conclusion(s): Our findings suggest that the “rule-out” group patients according to ESC 0-h/1-hour algorithm provides very high safety and efficacy for the triage toward AMI.