

Introduction

Acute coronary syndrome remains the leading cause of morbidity and mortality worldwide. Each year, more than 1.4 million patients in the United States and more than 4 million worldwide are hospitalized with NSTEMI-ACS. These numbers will continue to rise as the prevalence of patients with obesity and diabetes increases¹.

Acute coronary syndromes describe a spectrum of clinical syndromes ranging from unstable angina (UA) and non-ST-elevation myocardial infarction (NSTEMI) to ST-elevation myocardial infarction (STEMI). In this context NSTEMI is distinguished from UA by the presence of elevated serum level of cardiac biomarkers². Patient with UA have lower short term mortality (1.7 % at 30 days) than those with NSTEMI (5.1% at 30 days) ³.

There are five major pathophysiological processes that contribute to the development of NSTEMI-ACS, these are atheromatous plaque rupture or erosion with superimposed nonocclusive thrombus (by far the most common cause), progressive mechanical obstruction, dynamic obstruction, inflammation, and secondary unstable angina related to increased oxygen demand⁴.

The presentation of non-ST-elevation acute coronary syndrome ranges from progressive effort angina to post infarction angina. Clinical presentation depends on the severity of the arterial injury; the size and type of thrombus formed ,the extent and duration of ischemia, and the amount of previous myocardial necrosis. The extent of ischemia depends on the

myocardial distribution of the ischemia-producing artery, the severity of the ischemia-producing stenosis, the absence or presence of collateral circulation, and factors that affect the supply of oxygenated blood or that increase myocardial demands, such as the heart rate, blood pressure, and contractility. Patients may die or may develop MI, recurrent ischemia, heart failure, arrhythmia, or a stroke⁵.

As the patients with NSTEMI-ACS represent a heterogeneous group with the worst prognosis in patients with LM / 3VD disease, so an early identification of patients with LM/3VD disease is an important factor in the prognosis and selection of the optimal treatment strategy in patients with NSTEMI-ACS. In these patients (with LM/3VD) an early invasive approach will be of greater benefit when compared with conservative medical treatment. Early revascularization reduces the risk of death/MI, decreases the need for antianginal medications, allows a shorter hospital stay, and results in fewer readmissions⁶. So early accurate noninvasive predictors should be implicated in selection of patients with possible LM/3VD who will benefit from this strategy.

There are several clinical, electrocardiographic as well as laboratory findings that can help in this risk stratification. However, the predictive value of each of them is to be investigated.

AIM OF THE WORK

To demonstrate if ST-segment elevation in lead aVR of $\geq 0.5\text{mm}$ and maximal QRS duration of $\geq 90\text{ms}$, are useful predictors of left main and/or three vessel disease(LM/3VD) in patients presenting with non ST elevation acute coronary syndrome.