

Myocardial Infarction: What's Old, What's Gold and What's New?

Coronary Artery Disease (CAD) is the leading cause of morbidity and mortality in the industrialized Countries. It is estimated that about 7.5 million people in the world have died for cardiovascular diseases in 2017. Acute Myocardial Infarction (AMI) is the most common form of CAD with a mortality rate of about 15% and its incidence increases with advancing age occurring more frequently in men than in women below 60 years having atherosclerosis as the main risk factor for developing CAD.

Chest discomfort is the most common symptom of an AMI and also one of the most frequent causes of access to the Emergency Department (ED). Promptly recognize the main features of an AMI plays a key role in the early stratification of the patients who need to be treated in the so called “golden hour”. Depending on electrocardiogram (ECG) features or chemical biomarkers (hs-cTn, CK-MB, copeptin) may have ST-segment Elevation Myocardial Infarction (STEMI), non-STEMI (NSTEMI) caused by atheroma or Myocardial Infarction with Non-Obstructed Coronary Arteries (MINOCA).

Cardiogenic Shock (CS) is the most common cause of death in patients with AMI and a frequent consequence of left ventricular failure occurring in about 7-10% of patients with STEMI and due to hypoperfusion and hypoxia with rapid cell necrosis. Main complications related to AMI could be mechanical (heart failure, mitral valve dysfunction, aneurysms, heart rupture), arrhythmic (ventricular or atrial arrhythmias, sinus or atrioventricular node dysfunction) and thromboembolic (central or peripheral embolism).

Considering the incidence of CS, the latest guidelines of European Society of Cardiology (ESC) for the management of NSTEMI-ACS suggest an early invasive approach within 24 hours from admission in patients with a GRACE risk score >140 or hemodynamically instable.

Referring to the recent dramatic events, COVID-19 pandemic also changed the management of acute myocardial infarction as a consequence of the conversion of the most of the departments into COVID-19 hospitals. In fact, during the first quadrimester of 2020, we have seen a significant decrease of hospitalizations for myocardial infarction and a concomitant raise in complications and death rates. Likewise, therapeutics were also influenced by the infectious risk and a first-thrombolytic approach was preferred in a number of cases to primary percutaneous intervention (PCI) in STEMI patients in order to manage logistic and safety of healthcare professionals. More recently a consensus of scientific societies underlined that primary PCI approach should not be replaced by the thrombolysis-first approach in STEMI patients regardless of a potential COVID-19 diagnosis.

In this special issue we aim to bring together Original Research, Reviews, Mini-Reviews, Perspective, Protocols, Case Report articles to enhance our knowledge of the different aspects of myocardial infarction. In doing so we also hope to draw a road in this new context of pandemic.

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