Mechanical complications in STEMI patients: Trends in prevalence, acute phase prognosis and one-year mortality after the onset of reperfusion network.

Authors:
C García-Garcia1, O De Diego1, C Labata1, B Ruiz1, FR Rueda1, T Oliveras1, J Serra1, M Ferrer1, N El Ouaddi1, E Seder1, M Gonzalez1, A Bayes-Genis1, 1Germans Trias i Pujol University Hospital - Badalona (Barcelona) - Spain,

Topic(s):
Acute Coronary Syndromes: Post-Infarction Period

Citation:
Background: The development of mechanical complications (MC) following an ST elevation myocardial infarction (STEMI) is associated with a high acute phase and long-term mortality. However, the widespread use of reperfusion therapies with primary angioplasty (pPCI) and surgical management could have reduced the prevalence of MC and improved the prognosis of these patients in the last years.

Purpose: The aim is to analyze the changes in the prevalence, management and acute phase prognosis and 1-year mortality of STEMI patients complicated with MC between two periods, before and after the onset of pPCI reperfusion network.

Method: We included all STEMI patients in a single centre prospective registry. Between 1990 and 2000, 2,250 STEMI patients were consecutively admitted in the Coronary Care Unit of a University Hospital (pre-pPCI period). In 2007, pPCI reperfusion program was onset in our centre. Between 2007 and 2017, 3,783 consecutive STEMI patients were included in the registry (post-pCI period). We analyze the prevalence of MC, management (reperfusion therapies, surgery...) and 28-day and 1-year mortality among these two periods.

Results: A total of 6,033 STEMI patients were included in the registry (men 78.8%, mean age 61.7 years, SD 12.8). Patients admitted in the post-PCI period were older (62.4 vs 60.4 years, p<0.001) and have more prevalence of hypertension and dyslipidemia. Reperfusion therapy increased in post-pPCI period (89.1% vs 49.7%, p<0.001), due to widespread use of pPCI. A total of 105 patients (1.7%) develop any mechanical complication: 35 with ventricular septal rupture (VSR), 22 with papillary muscle rupture (PMR) and 48 patients with free wall rupture (FWR). Prevalence of MC has not been change between both periods. VSR occurred in 0.6% pre-PCI and 0.6% post-pPCI, p=0.98; PMR 0.3% vs 0.4% post-PCI, p=0.33; and FWR 1% vs 0.7% post-PCI, p=0.22). Overall 28-day STEMI mortality has been reduced in post-pPCI period (5.6% vs 9.4%, p<0.001 in acute phase). This 28-day mortality remains very high and without significant changes when MC appears: VSR: post-pPCI 77.3% vs 38.5%, p=0.02; PMR: 25.0% post-PCI vs 33.3%, p=0.69; and FWR: 65.4% post-PCI vs 63.6%, p=0.9). One-year mortality has not been changed between both periods and stays in a very high ratio (65% for VRS, 45.5% for PMR and 66.7% for FWR).

Conclusions: Although reperfusion therapy greatly increased with the onset of a pPCI reperfusion network, prevalence of MC has not been change over three decades in our series. Acute phase (28-day) and one-year mortality remains very high and without significant reduction in post-pPCI period.