

Recurrence of ST Elevation Myocardial Infarction (STEMI)

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Background: STEMI is the most ominous presentation of an acute coronary syndrome. Some patients suffer from recurrence of STEMI (reSTEMI). Objectives: To characterize reSTEMI patients as compared to patients with a single event STEMI (seSTEMI).

Methods: The STEMI data base of our center, which includes 853 patients 10/2001-06/2009 was used. Clinical and angiographic data of all patients 144 admitted with a reSTEMI were compared to 144 randomly selected seSTEMI patients.

Results: ReSTEMI occurred on average 2.3 years (0.08 to 13 years). Patients with re-STEMI had an increased prevalence of hyperlipidemia (74.5% Vs 29% $P < 0.0001$), hypertension (59% Vs 39.5% $P = 0.001$) and diabetes (38% Vs 25.6% $P = 0.023$). ReSTEMI patients showed reduced compliance with secondary prevention, with 50% current smokers, only 79% on aspirin and 64% on statins. They had a longer treatment delay: 35% Vs 71% arrived early (symptom to balloon $> 60'$), 36% Vs 7.6% were late arrivals ($< 120'$). They less frequently used the direct admission route (38.8% Vs 48.6%). Cardiogenic shock on admission was similar, but IABP was more frequently used in reSTEMI (25% Vs 9%, $p = 0.0005$). In 68% the culprit reSTEMI artery was the same as the first episode, of whom 87% involved the same site. The left coronary artery (LCA) was more frequently involved than the right coronary artery (RCA) (64.5% Vs 35.5% $P = 0.0001$). Time from first event was shorter for the LCA than the RCA (1.57+ 2.4 Vs 3.3+ 3.3 years, $p = 0.009$). All seSTEMI was treated by primary PCI, while 94.5% of re-STEMI received P PCI. Mortality: 4 of seSTEMI and one of reSTEMI.

Conclusions: ReSTEMI patients have a higher prevalence of risk factors, are inadequately educated about their disease management resulting in reduced compliance and late arrival. ReSTEMI tends to recur in the same coronary artery (perhaps explaining the relatively benign course). The LCA is more susceptible than the RCA. A more effective secondary prevention strategy may prevent reSTEMI.