

## Role of intracoronary adenosine on prevention of no reflow during Primary PCI in STEMI patients guided by MVO in CMR

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### Background:

Microvascular obstruction (MO) or no-reflow phenomenon is an established complication of coronary reperfusion therapy for acute myocardial infarction. It is increasingly recognized as a poor prognostic indicator and marker of subsequent adverse LV remodeling. Microvascular obstruction (MO) or no-reflow phenomenon is an established complication of coronary reperfusion therapy for acute myocardial infarction. It is increasingly recognized as a poor prognostic indicator and marker of subsequent adverse LV remodeling.

### Methods:

#### Study design:

This is an interventional prospective pilot study which was conducted on patients presenting to cardiology department in Ain Shams University hospitals with STEMI (St segment elevation myocardial infarction in the first 12 hours of presentation.) DEFINED as elevation of cardiac troponins at least one value above 99th percentile in a clinical setting consistent with myocardial ischemia.

Sample size: 50 patients.

#### Inclusion criteria:

Patients presented with STEMI for primary PCI. Patients with TIMI I flow after establishing flow by PTCA wire or PTCA balloon or by thrombus aspiration. Coronary angiography shows total occluded vessel with TIMI zero flow. Thrombus burden grade five. Informed consent about adenosine is taken before procedure and hazards of adenosine are discussed with the patient and operator according to protocol.

### Exclusion criteria:

Lack of informed consent. Patients presented with cardiogenic shock. Patients with complete heart block or second degree heart block. Patient with CKD on dialysis. Previous myocardial infarction, CABG. ICM with low ejection fraction less than 35%. Evidence of previous ischemia (previous CA with significant CAD lesion more than 70% by coronary angiography or by IVUS or FFR).

### Results:

There was no significant difference between two groups regarding TIMI and MBG score. There was a significant difference in myocardial salvage index and myocardium at risk with  $p$  value less than 0.001. Yet no increase in myocardial hemorrhage among the two groups. There was significant improvement in EF, LV mass and LV volumes in those who were given adenosine.

### Conclusion:

Adenosine improves no reflow on giving as a prophylactic drug. It improves the microcirculation thus increasing the salvaged myocardium improving microvascular obstruction and does not increase the percentage of microvascular hemorrhage.

### Keywords:

STEMI, Coronary no-reflow, MVO, MV HGE, Salvage Index, TIMI, MBG adenosine.