

Impact of Intracoronary Adenosine Administration During Primary PCI

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BACKGROUND:

Currently myocardial reperfusion with p-PCI is the best treatment strategy for STEMI, However, myocardial perfusion at the cellular level remains impaired despite removal of coronary obstruction in up to 50% of STEMI patients Several methods have been evaluated to improve reperfusion, including heart rate reduction, aspiration thrombectomy and several pharmacological approaches, such as glycoprotein platelet inhibitors, adenosine and drugs able to dilate the microcirculation, seem to be most effective when locally delivered through IC injection, probably because this results in an increased drug bioavailability in the area at risk.

OBJECTIVE:

the aim of our study was to clarify the efficacy of IC adenosine versus standard therapy only in STEMI patients undergoing p-PCI.

METHODS AND RESULTS:

Selected 45 patients presented to emergency room by

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acute STEMI and were randomized into two groups: Control group (25 patients) and Patient group who received IC adenosine (20 patients). Both were evaluated during p-PCI by MBG and TIMI flow grade, after the procedure, both groups were evaluated by STR in ECG, cardiac enzymes at 0-6-12 hours, and echocardiography within 24 hours and after 40 days.

CONCLUSIONS:

In patient group, TIMI flow was significantly better, incidence of ST resolution was significantly higher, and level of cardiac enzymes was significantly higher at 6 hours and significantly lower at 12 hours. Moreover, we found a larger increase in LVEF - and subsequently reduction in the incidence of heart failure -, more improvement of MR, TR, PASP and TAPSE in patient group. Conclusion: This study clarified a clinical benefit for IC adenosine in hard endpoints, such as TIMI flow, percentage of LVEF improvement, in patients undergoing p-PCI.