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Impact of Periprocedural TIMI flow on Long-term Clinical Outcomes in STEMI treated by Primary PCI: Results from Corea-AMI registry

Purpose: Despite optimal revascularization for STEMI is still associated with suboptimal reperfusion in a relatively large proportion of patients. The aim of this study was evaluate the correlation of pre- and post-procedural TIMI flow on long-term mortality in STEMI. **Methods:** 2805 STEMI patients in 9 hospitals from Corea-AMI registry were analysed. 4 groups in STEMI patients were divided by Pre- and post-procedural TIMI grade (Group I, 197 patients : 0 pre-procedural TIMI flow and 0~2 postTIMI flow, Group II, 34 patients : 1~3 preTIMI flow and 0~2 postTIMI flow, Group III, 1217 patients: 0 preTIMI flow and 3 postTIMI flow, Group IV, 1357 patients: 1~3 preTIMI flow and 3 postTIMI flow). The primary outcome was MACE, including composite of cardiac death, non-fatal MI, and TLR in all patients. **Results:** Over a mean follow-up of 3 years, there were significant differences in MACE (Group I, II, III, IV; 32.0% , 29.4%, 19.2%, 19.2%, $p<0.001$) and cardiac death (22.3%, 23.5%, 9.5%, 7.7%, $p<0.001$) by group, but MI (2.0%, 2.9%, 2.5%, 2.9%, $p=0.821$) and TLR (7.1%, 2.9%, 7.7%, 8.5%, $p=0.558$) did not significantly differ between each groups, respectively. In multivariate regression analysis, long-term MACE and cardiac death were more decreased in Group III (MACE: ORs, 0.549, $p<0.001$, Cardiac death: ORs, 0.426, $p<0.001$) and IV (MACE: ORs, 0.550, $p<0.001$, Cardiac death: ORs, 0.330, $p<0.001$) compared with Group I. **Conclusion:** This study shows that good post-procedural TIMI flow after PCI is associated with good prognostic factor on mortality and MACE, even though there was poor pre-procedural TIMI flow.