HIGHER GLUCAGON-LIKE PEPTIDE-1 LEVELS ON ADMISSION WERE ASSOCIATED WITH REDUCED INFARCT SIZE AFTER SUCCESSFUL REPERFUSION OF ST ELEVATION ACUTE MYOCARDIAL INFARCTION

Poster Contributions
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Background: Incretin enhancers and mimetics are clinically used to treat diabetic patients and also reported to be cardioprotective and reduce infarct size after acute myocardial infarction (AMI). However, there is no information about blood levels of incretins in patients with ST-elevation AMI, especially the levels on admission in spite of the potential clinical significance when considering the cardioprotective effect of incretin therapy.

Methods: Blood was withdrawn in the emergency department on admission of ST-elevation AMI. We measured the major incretin, glucagon-like peptide (GLP)-1(7-36) amide, glucose, insulin, and hemoglobin A1c in plasma simultaneously. Eighty-three consecutive patients (89% men; 63±13 years; 34% diabetes) who were successfully reperfused within 12 hours (3.1±2.4 hours) after symptom onset were analyzed and followed about serum CK-MB levels every 3 hours after admission to assess the infarct size.

Results: Plasma active GLP-1 was not detectable in 23/83 patients (27.7%). There was no significant difference in glucose (p=0.87), insulin (p=0.88), and hemoglobin A1c (p=0.76) levels on admission between patients with higher or lower GLP-1 defined as above or below the median value: 2.7 pmol/L. The lack of difference in glucose, insulin, and hemoglobin A1c between 2 groups were equally observed among diabetic and non-diabetic patients subgroups. Most importantly, peak CK-MB after admission was significantly lower in patients with higher GLP-1 than those with lower GLP-1 (165 [86-281] vs 252 [130-413] IU/L, p=0.049). After multivariate logistic analysis adjusted for age, sex, glucose at admission, and reperfusion time, higher GLP-1 was an independent factor for reduced infarct size defined as peak CK-MB below the median value: 206 IU/L (Odds ratio: 2.54, 95% confidence interval: 1.05-6.15, p=0.04).

Conclusions: Higher active GLP-1 level on admission was associated with reduced infarct size in patients with reperfused ST-elevation AMI, indicating possible cardioprotective mechanism of endogenous GLP-1 on admission. It would provide useful information to assess blood level of GLP-1 in association with AMI as incretin therapy prevails.