BACKGROUND: Although there is a high prevalence of abnormal glucose metabolism in patients with coronary artery disease (CAD), especially acute coronary syndrome (ACS), only HbA1C and/or fasting glucose which relatively miss daily hyperglycemic excursions were evaluated in previous studies associated with CAD. 1,5-anhydroglucitol (1,5-AG) has been used as an appropriate marker to detect for postprandial hyperglycemia. Moreover, measurement of 1,5-AG is not affected by meals or exercise. However, the association between 1,5-AG and CAD has not been clarified.

METHODS: Of 204 consecutive patients who underwent percutaneous coronary intervention (PCI) in our hospital and had no history of PCI or bypass surgery, 159 patients without a previous diagnosis of diabetes were examined. Moreover, we excluded 51 patients with A1C levels >7.0% and/or glucose levels >126mg/dl. Finally, 108 Patients without diabetes mellitus were examined glucose metabolism and other risk factors in fasting state after admission for PCI.

RESULTS: Levels of A1C, homeostasis model assessment ratio, lipid profile without high density lipoprotein cholesterol (HDL-C), and other risk factors were not significant difference between the patients with ACS (N=63) and stable effort angina pectoris (N=45). 1,5-AG was significantly lower (19.4±6.3μg/ml vs. 22.5±8.4μg/ml, P=0.035) and fasting glucose was higher (105±12mg/dl vs. 99±8mg/dl, P=0.004) in patients with ACS than those with effort angina pectoris. We also found that HDL-C correlated significantly better with 1,5-AG (r=0.33, P<0.001) than homeostasis model assessment ratio (r=−0.2, P=0.04), fasting glucose (r=−0.08, P=NS), and A1C (r=−0.06, P=NS).

CONCLUSIONS: Serum levels of 1,5-AG were significantly lower in patients with ACS, among non-diabetic patients. Moreover, 1,5-AG was also significantly correlated with HDL-C which possesses multiple antiatherogenic activities. This indicates that 1,5-AG would be an additional useful marker used in conjunction with other conventional risk factors to detect and evaluate glycemic risk for patients with ACS.