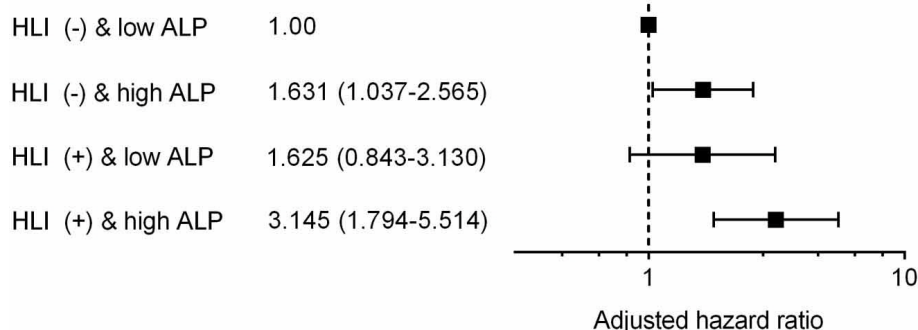


Prognostic Impact of Hypoxic Liver Injury and High ALP in Patients with STEMI Undergoing Primary PCI

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Background/Aims: Recently, elevated serum transaminase or alkaline phosphatase (ALP) has been proposed as a novel prognosticator for ST-segment elevation myocardial infarction (STEMI). We evaluated the combined prognostic impact of elevated serum transaminase and ALP levels in STEMI patients who underwent primary percutaneous coronary intervention (PCI). **Methods:** A total of 1176 patients with STEMI undergoing primary PCI between 2007 and 2014 were retrospectively enrolled from the INTERSTELLAR registry. Serum transaminase level over 2 times of upper normal range was defined as hypoxic liver injury (HLI) and the cut-off point of high ALP was median level (73 IU/L). Patients were divided into 4 groups to their HLI status and ALP level on admission: group 1, HLI (-) and low ALP; group 2, HLI (-) and high ALP; group 3, HLI (+) and low ALP; group 4, HLI (+) and high ALP. The primary endpoint was major adverse cardiac or cerebrovascular event (MACCE), defined as the composite of all-cause death, non-fatal myocardial infarction, non-fatal stroke, and ischemia-driven revascularization. **Results:** Median follow-up duration was 25 months (interquartile range, 10-39 months). The incidence of MACCE was highest in the group 4, compared with the group 1 (25.9% vs. 8.2%, respectively; $p<0.001$). Each of high ALP and HLI on admission were independent predictors of MACCE. Adjusted hazard ratio (95% confidence interval) for MACCE in the group 2, 3, and 4 were 1.631 (1.037-2.565; $p=0.034$), 1.625 (0.843-3.130; $p=0.147$) and 3.145 (1.794-5.514; $p<0.001$), as compared with the group 1 (Figure 1). **Conclusions:** Combined HLI and high ALP on admission is associated with poor clinical outcomes in patients with STEMI who underwent primary PCI.



Clinical factors associated with obstructive coronary disease in out-of-hospital cardiac arrest

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Background/Aims: Although acute coronary syndrome is a main cause of out-of-hospital cardiac arrest (OHCA), there has been no convincing data on routine evaluation of invasive coronary angiography (CAG) in OHCA. We investigate the clinical factors associated with obstructive coronary artery disease (CAD) among patients with OHCA. **Methods:** Data on 526 OHCA patients who underwent CAG after successful resuscitation were obtained from a nation-wide registry database of cardiac arrest (Korean Cardiac Arrest Research Consortium). Obstructive CAD was defined as lesions with percent diameter stenosis $\geq 50\%$ from CAG. Clinical factors including cardiovascular risk factors, laboratory test and initial electrocardiogram were compared between patients with or without obstructive CAD. Independent risk factors for obstructive CAD were assessed by multivariate logistic regression analysis. Prediction models for obstructive CAD were derived by a combination of the clinical factors, and prediction ability of the models was assessed by area under the receiver operator characteristics curve (AUC) using 10,000 permutation resampling methods. **Results:** Among study patients, 254 (49.2%) had obstructive CAD. Those with obstructive CAD were older (60.8 ± 12.6 vs. 55.1 ± 15.2 years, $P<0.001$) and had higher prevalence of hypertension (53.5 vs. 35.9%, $P<0.001$), diabetes mellitus (29.1 vs. 20.6%, $P=0.032$), positive cardiac enzyme (83.5 vs. 74.0%, $P=0.010$), and initial shockable rhythm (70.1 vs. 61.1%, $P=0.033$). Older age (≥ 60 years) (odds ratio [OR], 2.01; 95% confidence interval [CI], 1.36-3.00; $P=0.001$), hypertension (OR, 1.74; 95% CI 1.18-2.57; $P=0.005$), positive cardiac enzyme (OR, 1.72; 95% CI 1.09-2.70; $P=0.019$) and initial shockable rhythm (OR, 1.71; 95% CI 1.16-2.54; $P=0.007$) were independently associated with obstructive CAD after multivariable regression analysis. Prediction abilities for obstructive CAD increased proportionally when these 4 factors were sequentially added ($P<0.001$) (Figure). **Conclusions:** In patients with OHCA, those with old age, hypertension, positive cardiac enzyme and initial shockable rhythm were associated with obstructive CAD. Early CAG should be considered in these group of patients.

