Elevated Plasma HsCRP Level Is a Predictor of Periprocedural Myocardial Injury During PCI

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Background: Elevated high sensitivity C-reactive protein (hs-CRP) has been well-known as a biomarker reflecting inflammatory process for prediction of ischemic events among patients with coronary artery disease. Relatively small studies have identified a heightened and sustained inflammatory response after PCI to be a predictor of periprocedural events after coronary angioplasty and a marker of increased restenosis risk among patients undergoing coronary stenting. Embolization of atherosclerotic and thrombotic debris can induce myocardial necrosis during percutaneous coronary interventions (PCIs). This study was designed to evaluate whether pre-procedural hs-CRP level is associated with procedure related distal microembolization producing myocardial injury (assessed by CK-MB level) after assessed by CK-MB level after PCI. Results: A total of 310 patients with chronic stable angina and acute coronary syndrome, who underwent elective percutaneous coronary intervention were evaluated in National Institute of Cardiovascular Disease (NICVD), Dhaka with a view to evaluate the relationship between preprocedural hs-CRP and rise of CK-MB level, before and after PCI. Patients were divided in 2 groups according to hs-CRP: Group I: hs-CRP < 3 mg/L Group II: hs-CRP > 3 mg/L. Results: A total of 310 who were divided into two groups: Normal CRP group (n = 131) and elevated CRP group (n = 179). Following PCI, CK-MB level was raised from baseline in both groups. In normal CRP group, there was no significant elevation of elevation of CK-MB level after PCI (Pre-procedural VS Post-procedural: 18.6 ± 5.4 VS 29.1 ± 5.4 mg/L) in both groups. In elevated CRP group, there was significant elevation of CK-MB level after PCI (Pre-procedural VS Post-procedural: 19.1 ± 6.7 VS 52.46 ± 9.4 mg/L, p < 0.01). The mean rise of CK-MB level was higher in group II than group I (133.06 ± 9.19 U/L vs. 1178), other positive group (n = 1178), other positive group (n = 1098), diffuse and multivessel group (n = 536). The definition of diffuse spasm was defined as less than 30mm in length of significant spasm area. Other positive spasm group consisted of total positive Ach provocation test groups except diffuse and multi-vessel group. Cumulative clinical outcomes up to 3 years were compared among the 3 groups. Results: In proportional hazard Cox-regression analysis adjusted by co-variates such as age, gender, current smoking, current alcoholics, myocardial bridge, HDL coronary artery hypertension, diabetes and dyslipidemia diffuse and multivesel group had the higher incidence of recurrent chest pain requiring repeat coronary angiography during 3-year follow-up, compared to other positive spasm group (HR, 0.63; 95% CI, 0.431-0.931; p-value, 0.020) and negative spasm group (HR, 0.505; 95% CI, 0.283-0.785; p-value <0.001). However, there was no difference between other positive spasm group and negative spasm group (Figure). Conclusion: The pts with diffuse and multivesSEL spasm was associated with higher incidence of adverse clinical outcomes such as recurrent chest during 3-year follow-up period.

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Methods: In 129 residents of Zhejiang province, we conducted a questionnaire survey on collected blood, estimated central blood pressure using the Spacelabs Cor device and genotyped two SNPs in candidate RAAS genes with polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP) method and Taqman probe method. SAS 9.1 software was used for statistical analysis. Results: The 1293 participants included 308 (23.8%) hypertensive patients, of whom 106 (34.4%) were taking antihypertensive medication. For AGT C-532T polymorphism, CT and TT compared with CC had lower central pulse pressure (PP) (P=0.048) in all subjects and lower central SBP (P=0.003) and PP (P=0.02) in men. Each T allele was associated with a lower central PP by 2.5mmHg. We found a significant interaction between AGT C-532T polymorphism and AT2R G1675A polymorphism in relation to central BP (Pint=0.05). With the increase of the AGT C-532T T allele, the A allele carriers of the AT2R G1675A polymorphism had a lower central SBP (P=0.05). We also found a significant interaction between the AGT C-532T and serum uric acid in relation to central BP (Pint=0.03). Compared with AGT C-532T CC subjects central BP was significantly lower in T allele carriers with a concentration of serum uric acid between 264mmol/l and 319mmol/l (P<0.04). Conclusion: First, both in single gene analysis and analyses involving gene-gene, gene-environment interactions, the T allele carriers of AGT C-532T polymorphism (except women) showed a lower central SBP and PP. AGT C-532T polymorphism may be associated with hypertension and arterial stiffness. Second, the interaction between AGT C-532T and AT2R G1675A polymorphism may be associated with hypertension and arterial stiffness. Third, the interaction between AGT C-532T and serum uric acid may be associated with central BP.
Impact of Simvastatin on Development of New-onset Diabetes Mellitus in Asian Population: Three-year Clinical Follow up Results

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Background: Although statin therapy is beneficial for vascular diseases, the relationship between specific statin therapy and incidence of new-onset diabetes mellitus (DM) remains uncertain. We evaluated the impact of Simvastatin therapy on the development of new-onset DM from 3-year clinical follow-up data in patients with diabetes mellitus.

Methods: A total of 3,436 consecutive patients who did not have DM were enrolled. New-onset DM was defined as having a fasting blood glucose ≥126 mg/dL or HbA1c ≥6.5%. Baseline characteristics between the Simvastatin and the control group were propensity score matched (PSM, C-statistics = 0.65%). Results: Between the two groups, the incidence of new-onset DM in the Simvastatin group was 3.8% vs. 2.0% (p = 0.017). Following PSM, the 2 groups were well balanced except for higher levels of brinogen, ALT, and ALP in the Simvastatin group. After adjustment, there was no difference in the incidence of new-onset DM between the 2 groups up to 3 years (Figure).

Conclusion: In our study, the relationship between the use of Simvastatin and the incidence of new-onset DM remains unclear. Long-term follow up with a larger study population will be necessary for further information.

Abdominal Adiposity Measured with Dual Bioelectrical Impedance Analysis of Hospitalized Patients in the Cardiology Ward

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Background: Obesity is a well-known risk factor of cardiovascular disease. However, several reports demonstrated “obesity paradox”, while central obesity was associated with the highest risk of mortality, which suggests the significance of visceral fat measurement. Recently, a novel system with dual bioelectrical impedance analysis (HD-2000, Omron healthcare, Kyoto) was developed. This technique allows for non-invasive measurement of body composition, including radiation exposure and the measurements were validated to have a good correlation with computed tomography.

Methods: A total of 60 patients (69.3 ± 10.6 years old, male 80%) admitted to the department of cardiology were measured their visceral fat areas with this novel system.

Results: The values of body mass index (24.0 ± 4.6 kg/m² vs. 21.6 ± 2.6 kg/m², p = 0.03) and visceral fat area (82.0 ± 51.6 vs. 46.1 ± 15.7 cm², p = 0.001) in the hospitalized patients...