— F-199 —

Association of Soluble Receptor for advanced glycation end product(sRAGE) with increasing central aortic stiffness in hypertensive patients

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Background Advanced glycation end-products(AGE) may cause vascular stiffening by collagen crosslink or by interaction with their cellular transductional receptor (RAGE). In humans, a secreted isoform of RAGE, termed soluble RAGE(sRAGE), results from alternative splicing of RAGE mRNA and may act as decoy of AGE. Also, the level of soluble RAGE may reflect the activity of cell surface RAGE. Here we studied the relation of plasma sRAGE level and arterial pulse wave velocity(PWV) in hypertensives patients. Methods Total of 415 patients were enrolled(Male : 57.6 %, Mean age : 53.2 years) and Diabetic patients were 23.1%(n= 96) of them. All the patients underwent PWV using VP-1000 PWV system(ColinTM). Blood sampling was done for analysis of s-RAGE.(Enzyme-linked immunosorbent assay kit : Quantikine R&D systems). Results The log transformed sRAGE was significantly correlated with the marker of central aortic stiffness(hf PWV, r=0.159, p=0.003). The hfPWV showed tendency for progressive increase according to the quartile level of sRAGE(r=0.180, p=0.001). By multiple linear regression analysis, the log-transformed sRAGE was independently correlated with hfPWV(ß=0.145, p=0.002) when controlled for age(ß =0.406, p<0.001) and systolic blood pressure(ß=0.234, p<0.001). It also showed significant correlation with hfPWV in diabetic patients(ß=0.300, p=0.001), but not in non-diabetic patients(ß=0.089, p=0.099). Conclusion This study has demonstrated, for the first time, that serum sRAGE level was independently correlated with marker of central aortic stiffness. This result suggests the potential role of RAGE in the pathogenesis of aortic stiffness.

— F-200 —

Optimal therapeutic guideline of plasma NT-proBNP level for patients with non-ischemic cardiomyopathy in outpatients clinics

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Background : The N-terminal fragment of the BNP prohormone(NT-proBNP)may be not only a diagnostic marker of all forms and severity of heart failure but also a marker of therapeutic monitoring and prognosis. But the prognostic and therapeutic monitoring value of NT-proBNP has been poorly investigated in patients with non-ischemic cardiomyopathy. Objectives : The aims of this study were to determine the value of NT-proBNP for prediction of hospitalization or cardiac death and the echocardiographic parameter which was well correlated with NT-proBNP. **Methods :** We evaluated the outcomes of 142 patients with non-ischemic cardiomyopathy. The patients were grouped into idiopathic DCMP(104 patients), myocarditis(17 patients), alcoholic DCMP(16 patients), adriamycin-induced cardiomyopathy(5 patients). Follow-up Doppler echocardiographic examinations were performed in 73 patients with dilatied cardiomyopathy. **Results :** Mean follow-up was 616 days(19-2874 days). The best 2 year-event free survival was 0.90 in the myocarditis group and the 4 year-event free survival in the idiopathic DCMP group was 0.67. It was proved that the initial (sampling on predischarge period or first OPD visit) NT-proBNP, the lowest NT-proBNP and the highest NT-proBNP during follow up were predicting values of hospitialization or cardiac death. The optimal cut-off value of the initial NT-proBNP level using a receiver-operating-characteristic curve was 1000 pg/ml (AUC 0.690, sensitivity 0.619) and the lowest NT-proBNP was 600 pg/ml (AUC 0.813, sensitivity 0.714). In the initial echocardiographic parameters EF(ejection fraction), LA size were well correlated with NT-proBNP. In the follow-up echocardiographic parameters LV end systolic dimension, EF and LA size were well correlated with NT-proBNP. **Conclusions :** In patients with non-ischemic cardiomyopathy the optimal cut-off value of the initial NT-proBNP was 1000 pg/ml and the lowest NT-proBNP during follow-up was 600 pg/ml. These values may be used as therapeutic monitoring or prognostic guideline for patients with non-ischemic cardiomyopathy in outpatients clinics. In patients with dilated cardiomyopathy ejection fraction was the best correlated with NT-proBNP.