CORONARY ANGIOGRAPHIC CHARACTERISTICS OF PROVOCATION TEST IN VASOSPASTIC ANGINA PRESENTED WITH SUDDEN CARDIAC DEATH OR SYNCOPE

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Background: Coronary vasospasm may cause life-threatening symptoms; out of hospital cardiac arrest or syncope. However, little is known whether the coronary artery provocation test can discriminate or predict life-threatening symptoms. We investigated the clinical and coronary angiographic characteristics of provocation test in the patients with vasospastic angina (VSA) presented with sudden cardiac death (SCD) or syncope.

Methods: 209 VSA patients were clinically diagnosed between May 1997 and May 2011 (male 134, 62.86±12.18 years). Among those, 54 patients who underwent coronary artery provocation test in a hemodynamically stable state were included without vasodilator therapy. Acetylcholine or ergonovine was used for provocation of coronary spasm. Coronary angiographies of the patients were analyzed by their spastic morphology and features.

Results: Among 209 patients, 163 patients had only chest pain without life-threatening symptoms (group A) and 46 patients had history of out of hospital cardiac arrest or syncope (group B). The demographic and clinical parameters such as age, gender, body weight, height, smoking history, family history and old myocardial infarction history were not different between two groups (all p value>0.05). In provocation test, group B (n=25) had coronary artery spasm of more than 1 vessel (52% versus 0.03%, p=0.001) and more frequent involvement of RCA (65.2% versus 27.3%, p=0.011) compared to group A. In sub-analysis, SCD survivors (n=8) were even higher in multiple coronary spasm (62.5% versus 47.1%, p=0.046), had more LAD spasm (100% versus 53.3%, p=0.026) compared to syncope patients and had earlier induction of spasm (87.5% versus 36.4%, p=0.035) compared to group A. The patients with syncope showed more RCA spasm (73.3%), in contrast to more LAD spasm in SCD patients. However, there was no difference in the frequency of spontaneous spasm, focal/ diffuse pattern of spasm, spasm-induced time, presence of near total obstruction of induced spasm and provocation drug.

Conclusions: These results can provide the correlation of warning sign in coronary angiographic characteristics of provocation test with life-threatening events in vasospastic angina.