Relationship between below-the-knee DVT and atherosclerosis in temporary houses after Eastern Japan Great Earthquake 2011

Abstract No:

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Enter Objectives / Purpose Statement:

Cardiovascular diseases have increased in disaster area after Eastern Japan Great Earthquake 2011. We have reported that below-the-knee DVT (BKDVT) increase after the earthquake. Arterial velocity pulse index (AVI) is calculated the ratio of speed changing (dv/dt) at brachial artery during systolic period and diastolic period. The value of AVI increases by aging, arterial sclerosis and peripheral arterial resistance. We attempted to screen BKDVT and measure AVI simultaneously in temporary houses after Eastern Japan Great Earthquake.

Method:

Subjected were 508 residents (male 120, female 388, mean age 71.1±10.1 year-old) living in temporary houses in Kamaishi city, Ohtsuchi city, Miyako city and Ohfunato city. AVI was measured by AVE-1500 (Shisei Datum, Tokyo). BKDVT was detected by ultrasound with sitting position. D-dimer and NT-pro BNP were measured simultaneously by point of care testing (Roche).

Results:

BKDVT was detected in 60 residents (male 8, female 52). The mean age of the residents with or without BKDVT was 73.4±12.6 years old, 70.9±9.7 years old, respectively (n.s.). D-dimer of those with BKDVT (0.61±0.60μg/) was significantly higher than that of those without it (0.41±0.48 μg/ml)(p=0.0016). NT-pro BNP of those with or without BKDVT was 238.9±201.2 ng/ml, 173.0±257.7 ng/ml, respectively (n.s.). AVI of those with BKDVT (27.2±9.6) was significantly higher than that of those without it (25.0±7.4)(p=0.017). BKDVT did not relate with history of hypertension or dyslipidemia. D-dimer>0.5 μg/ml, NT-pro BNP>125 ng/ml and AVI>27 were significantly related with BKDVT. In logistic regression analysis, odds ratio of D-dimer>0.5μg/ml for BKDVT was 2.79 (95%CI; 1.54-5.04, p=0.0007), that of AVI>27 was 2.02 (95%CI; 1.10-3.70, p=0.024), that of NT-pro BNP >125 ng/ml was 1.54 (95%CI; 0.86-2.74, p=0.149).

Conclusions:

AVI indicates early atherosclerotic change of artery. The present study may show that DVT relate with early systemic atherosclerosis. Further study is needed to clarify that the mechanism of relationship between DVT and AVI.

Categories:

DEEP VENOUS THROMBOSIS