

Relationship between arterial velocity pulse index (AVI) and below-the-knee DVT (BKDVT) in residents living in Kashiwazaki city

Abstract No:

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Great earthquake hit Kashiwazaki city in 2007. We had reported that many evacuees had below-the knee DVT (BKDVT) after the earthquake and they have been remained now. A new method of measuring atherosclerosis, arterial velocity pulse index (AVI), has been developed. AVI is measured by velocity of pressure (dp/dt) at the brachial artery. We attempted to measure AVI in residents in Kashiwazaki city and studied relationship between AVI and BKDVT.

Method:

Subjected were 699 residents (male 152, female 483, mean age 69±10 year-old) in Kashiwazaki city in 2014. BKDVT was determined by compression ultrasonography in sitting position. AVI was measured by AVE-1500 (Shisei-Datum) at the brachial artery using manchette. Plasma D-dimer was also measured by blood testing (VIDAS).

Results:

BKDVT was determined in 64 residents (10 male, 54 female). Age with or without BKDVT was 73±10 year-old, 69±10 year-old ($p<0.005$), respectively. D-dimer with or without BKDVT was 749.7±555.0 ng/ml, 495.4±542.9ng/ml ($p<0.005$), respectively. AVI with or without BKDVT was 29.7±7.3 ($p<0.005$), 26.8±8.4, respectively. In logistic regression analysis, odds ratio of D-dimer >500 ng/ml for BKDVT was 2.42 (95%CI: 1.38-4.24, $p=0.0019$). That of AVI for BKDVT was 1.83 (95%CI: 1.04-3.21, $p=0.035$).

Conclusions:

The present study showed that BKDVT was correlated with atherosclerosis. Further study is needed to clarify the mechanism of relationship between AVI and DVT.

Categories:

DEEP VENOUS THROMBOSIS