The Application of Brachial-Ankle Pulse Wave Velocity as a Clinical Tool for Cardiovascular Risk Assessment

To the Editor:
I read with interest the article of Vlachopoulos et al, which evaluated the usefulness of brachial-ankle elasticity index (also known as brachial-ankle pulse wave velocity [baPWV], which is the term more commonly used in Japan) for predicting future cardiovascular (CV) events by meta-analysis. I would like to describe here the applicability of baPWV as a clinical tool for CV risk assessment.

The concept that increased large arterial stiffness is one of the novel players in the initiation and/or progression of CV disease has been widely accepted. Carotid-femoral pulse wave velocity reflects this large arterial stiffness and, therefore, it has received much attention as an independent marker for predicting future CV events. On the other hand, baPWV reflects the stiffness in large- to middle-sized arteries and, therefore, baPWV has not yet fully been recognized as a marker for predicting future CV events. The study by Vlachopoulos et al is the first meta-analysis to demonstrate its usefulness in predicting future CV events.

The ideal markers for screening patients with a high CV risk should be relatively noninvasive and readily applicable to an asymptomatic population. The baPWV is simple enough to be measured in general clinical practice (just wrap the pressure cuffs around 4 extremities), and it has been widely used by Japanese physicians who specialize in the areas of atherosclerosis, hypertension, or CV disease (baPWV was used in >10,000 hospitals or clinics in Japan).

Notably, the present meta-analysis did not analyze the raw data of longitudinal cohort studies included in their analysis. Therefore, patient clinical backgrounds were not fully adjusted among the studies, and it has not been made clear whether baPWV provided more information for predicting future CV events than the conventional CV risk assessment. The next logical step is to reanalyze the raw data of relevant studies to establish the reference value of baPWV for predicting prognosis. In addition, future studies should also examine the validity of path length for the measurement of baPWV.

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None.

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