



Hiromichi Suzuki, M.D., Ph.D.

Professor, Department of Nephrology, Saitama Medical School

abstract

Evaluation of Vasculature in Patients with Chronic Kidney Disease

There is a close relationship between cardiovascular disease (CVD) and chronic kidney disease (CKD) and vascular changes in CKD are associated with greater CV risk. Much research has focused on the role of aortic stiffness as a cause of CVD in patients with CKD; however, less attention has been paid to its potential role in the progression of renal dysfunction. In the present talk, four topics will be discussed.

1. The relationship between aortic stiffness and prognosis of patients with CKD

In patients with stage 5 CKD, pulse wave velocity (PWV) can be used as a tool for prognosis of these patients. However, there are few conclusive studies for patients with stages 3 and 4. Therefore, the question is how to evaluate aortic stiffness in these patients? Several studies have clearly demonstrated that aortic stiffness increases progressively as renal function declines. Besides, the role of the augmentation index (AI) in the progression of renal dysfunction and its association with CVD remains uncertain.

2. Predictability of AI and PWV in patients with CKD

A number of studies have shown that PWV can be used to predict CVD; however, few studies have examined the association between AI and CVD in patients with CKD.

3. It is uncertain whether progression of CKD is independent of AI and PWV.

4. AI and PWV might be attenuated by treatment with antihypertensive drugs.

Evaluation of vascular changes in CKD using PWV and AI should be conducted much more extensively than previously undertaken, because PWV and AI are independent determinants and each value should be evaluated separately in spite of similar predictive values.