

## KSN 2017 Abstract

KSN-17-P066

### Vascular calcification and left ventricular hypertrophy in hemodialysis patients: interrelationship and clinical impacts

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**Objectives** : Vascular calcification (VC) and left ventricular hypertrophy (LVH) are the major cardiovascular system pathologies in hemodialysis (HD) patients. However, their relationship and combined effects on clinical outcomes are unknown.

**Methods** : Maintenance HD patients (N = 341) who underwent echocardiography were included. Plain chest radiographs were examined for aortic arch VC. The relationship between VC and LVH and their clinical significance for deaths and cardiovascular events (CVEs) were investigated.

**Results** : VC was found in 100 patients (29.3%). LVH was more prevalent in patients with VC compared with those without VC (70% vs. 50.2%, respectively,  $P = 0.001$ ). VC was independently associated with a 2.42-fold increased risk of LVH (95% confidence interval [CI], 1.26–4.65). In multivariate analysis, compared with patients with neither VC nor LVH, the coexistence of VC and LVH was independently associated with CVE (hazard ratio [HR], 2.01; 95% CI, 1.09–3.72), whereas VC or LVH alone was not. Patients with both VC and LVH had the highest risk for a composite event of deaths or CVE (HR, 1.88; 95% CI, 1.15–3.06). Significant synergistic interaction was observed between VC and LVH ( $P$  for interaction = 0.039).

**Conclusions** : VC was independently associated with LVH. The coexistence of VC and LVH was associated with higher risk of deaths and CVEs than either factor alone. VC and LVH showed a synergistic interaction for the risk of deaths and CVEs.

**Keywords** : Hemodialysis; Cardiovascular event; Death; Left ventricular hypertrophy; Vascular calcification