

## KSN 2017 Abstract

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### Retinopathy and left ventricular hypertrophy in patients with chronic kidney disease: interrelationship and impact on clinical outcomes

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**Objectives** : Retinopathy and left ventricular hypertrophy (LVH) are representative markers of microvascular and cardiac dysfunction in patients with chronic kidney disease (CKD). However, their relationship and their combined effects on clinical outcomes are unknown.

**Methods** : We included 401 patients with nondialysis-dependent CKD stage 3–5 who had been examined with fundus photography for diabetic or hypertensive retinopathy. The presence of LVH was identified by echocardiography. The clinical significance of retinopathy and LVH was evaluated in terms of the rate of renal function decline and for any cardiovascular event (CVE)/death.

**Results** : CKD patients with retinopathy had a higher prevalence of LVH than those without retinopathy (38.9% vs. 27.6%,  $P = 0.017$ ). The presence of retinopathy was independently associated with LVH (odds ratio 1.69, 95% confidence interval [CI] 1.02, 2.80). Compared with subjects without either retinopathy or LVH, the coexistence of retinopathy and LVH was independently associated with rapid renal function decline ( $\beta = -2.77$ ; 95% CI  $-5.40, -0.14$ ), whereas retinopathy or LVH alone were not. Patients with both retinopathy and LVH had a higher risk of CVE/death (hazard ratio 2.76; 95% CI 1.44, 5.29) than patients with either factor alone. A significant synergistic interaction was observed between retinopathy and LVH ( $P$  for interaction = 0.046).

**Conclusions** : Retinopathy was independently associated with LVH. The coexistence of retinopathy and LVH was associated with higher risks of CKD progression and CVE/death than was either factor alone, and their combined effects synergized to predict the risk of CVE/death.

**Keywords** : Retinopathy, Left ventricular hypertrophy, Chronic kidney disease