Intrarenal Renin-angiotensin System in Chronic Kidney Disease

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The renin-angiotensin system (RAS) has key regulatory functions for blood pressure and fluid homeostasis. Dysreguation of the system can have maladaptive effects to promote renal injury in chronic diseases such as hypertension, heart failure, obesity, diabetes, and primary renal disease. These actions for the RAS to promote disease pathogenesis are especially in diabetic nephropathy, the most common cause of end-stage renal disease in Korea. Evidence of a role for the RAS activation in chronic kidney disease comes from studies in the animal models and randomized clinical trials showing efficacy of angiotensin-converting enzyme inhibitors and/or angiotensin-receptor blockers to slow the progression of renal disease. Widespread applications of these therapies to a range of renal diseases may have contributed to the recent reduction in the incidence rates for end-stage renal disease. Therefore, I provide a general review of the RAS and its role in chronic kidney disease, especially in diabetic nephropathy.