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Urate lowering therapy to prevent CKD progression-pro

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The prevalence of hyperuricemia is increasing as the renal function declines. Hyperuricemia is related to oxidative stress, endothelial dysfunction, and deterioration of renal blood flow. Recently, hyperuricemia itself has been considered as a risk factor for the progression of kidney diseases. In Chronic Renal Insufficiency Cohort (CRIC) study, the development of ESRD was affected accordingly as the level of serum uric acid increases. Even a slightly elevated uric acid level (7-8.9mg/dL) was associated with nearly doubled risk for incident kidney diseases.

However, it is still unclear whether asymptomatic hyperuricemia in patients with chronic kidney diseases should be treated or not. The reason is due to some discrepancy among clinical studies. In Febuxostat for cerebral and cardiorenovascular events prevention (FREED) study, febuxostat reduced a risk of renal and cardiovascular events. In contrast, the effect was not shown in Febuxostat versus placebo randomized controlled trial regarding reduced renal function in patients with hyperuricemia complicated by chronic kidney disease stage 3 (FEATHER) study. However, subgroup analysis showed it was effective in the patients with early stage of chronic kidney diseases or without proteinuria.

It is clear hyperuricemia affects renal and cardiovascular outcomes. Urate lowering therapy could not be effective for all patients, but it is clearly beneficial for subpopulation. The effect of urate lowering therapy would depend on several factors: renal function, diabetes, and proteinuria. It is necessary to elucidate subpopulation who would respond to the urate lowering therapy.