Effect of hyperuricemia treatment on chronic kidney disease

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I read with great interest the article entitled “Comparative effect of allopurinol and febuxostat on long-term renal outcomes in patients with hyperuricemia and chronic kidney disease: a systematic review” by Hu and Brown [1]. The authors reviewed the effect of xanthine oxidase inhibitors on the progress of chronic kidney disease (CKD). Febuxostat was more renoprotective than allopurinol in patients with hyperuricemia and CKD by keeping higher estimated glomerular filtration rate, reduced progression of CKD, and reduced serum uric acid levels, although the retrieved studies were retrospective and presented serious risk of bias. I have a comment about their study.

A randomized controlled trial (RCT) was reported, presenting the advantage of allopurinol in patients with hyperuricemia and CKD [2]. The patients with a high risk of CKD progression presented no decline in estimated glomerular filtration rate as compared with placebo. Thereafter, one of the authors in this report reviewed 3 RCTs regarding the effect of urate-lowering treatment on CKD [3], presenting that the reductions of serum uric acid levels by urate-lowering treatment with febuxostat or allopurinol did not result in clinically meaningful improvement of CKD. The discrepancy of results may be derived from the difference in clinical outcomes such as improvement and suppressing the progression of CKD. Hu and Brown reviewed retrospective observational studies and a meta-analysis with RCTs can be recommended to confirm the efficacy of urate-lowering treatment on CKD outcomes.

The severity of CKD is closely related to comorbidities such as hypertension, diabetes mellitus, and other metabolic disorders [4]. Waheed et al. reported the link between hyperuricemia and CKD by considering renin-angiotensin

system activation, nitric oxide synthase inhibition, and macro-/micro-vascular disease development [5]. Taken together, the effect of hyperuricemia on subsequent CKD should be evaluated comprehensively by considering several metabolic mechanisms in human body instead of urate-CKD relationship.

Compliance with ethical standards

Disclosures None.

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