Role of febuxostat in retarding progression of diabetic kidney disease with asymptomatic hyperuricemia: A 6-months open-label, randomized controlled trial

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Abstract

Introduction: Hyperuricemia is associated with chronic kidney disease (CKD) progression and poor cardiovascular outcomes. We studied the effect of febuxostat on estimated glomerular filtration rate (eGFR), proteinuria and monitored the safety profile of the medication.

Material and Methods: This is a prospective open-label, randomized study in CKD stage 3 and 4 patients with diabetic nephropathy and asymptomatic hyperuricemia. Patients were randomized into febuxostat 40 mg daily and no treatment group using block randomization method and were followed up for 6 months. Their usual care for diabetes mellitus,

hypertension and dyslipidemia were continued in the study. Blood and urine investigations were monitored at baseline, 3 months and 6 months.

Results: The eGFR in febuxostat group was stabilized at 6 months with no significant reduction [26.2 (IQR 14.30) at baseline to 26.3 (IQR 15.2) ml/min/1.73 m^2]. Whereas, there was a significant reduction of the eGFR in no treatment group from 28.2 (IQR 17.9) to 27.6 (IQR 19.3) ml/min/1.73 m^2 (p value < 0.01). We found the HbA1c (glycosylated hemoglobin) was significantly increased in febuxostat group from 7.2 ± 0.5 % at baseline to 7.6 ± 1.4 at 6 months (p value 0.04) but no significant change of HbA1c in the no treatment group. Proteinuria level was unchanged in both groups. The commonest adverse event was joint pain.

Conclusions: Febuxostat was able to preserve eGFR in CKD patients with diabetic nephropathy and this effect was beyond glycemic control. Increment of HbA1c level in febuxostat group needs further larger trials.

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