EVALUATION OF RENAL FUNCTION IN GOUT AFTER NORMALISATION OF SERUM URIC ACID LEVEL

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Background: Chronic kidney disease (CKD) is one of the main causes of mortality in gout. In addition, hyperuricemia can contribute to the decrease of renal function.

Objectives: The aim of this study was to evaluate the evolution of renal function after reducing serum uric acid (sUA) level to therapeutic target in gout, and to identify the factors that might influence this evolution.

Methods: Patients with gout were followed at a single university-based hospital. They were free of urate lowering therapy (ULT) and had an estimated glomerular filtration rate (eGFR) higher than 15 ml/min. Renal function was measured at start of ULT and when sUA was reduced below 380 μmol/L (or 6.0 mg/dL). ULT was allopurinol or febuxostat at the choice of clinician.

Results: In this retrospective study, 63 patients (pts) were included with an initial mean sUA level of 541 μmol/L (±86). Overall 42 pts were treated with allopurinol and 21 with febuxostat for an average length of 278 days (+185). After ULT, mean eGFR differed significantly: +2.6 [IC95%: -0.279, 5.484; p=0.08] +3 [IC95%: 0.167, 5.794; p=0.04] and +2.7 [IC95%: 0.490, 4.960; p=0.02] ml/min/1.73 m² depending on the calculation method. Cockcroft-Galt (C-G), MDRD and CKD-EPI, respectively. eGFR improvement was statistically significant, p=0.04, 0.02 et 0.01, respectively. Initial eGFR >45 ml/min/1,73 m² was associated with a better outcome of eGFR expressed in percentage: +4.7% vs −7.3% (p=0.02), +6.3% vs −4.9% (p=NS), +6.2% vs −5.3% (p=0.03) according to the calculation method, C-G, MDRD and CKD-EPI, respectively. We also found a better evolution of renal function when patients were treated with allopurinol compared to febuxostat, but confounding bias might have occurred since their mean eGFR was also better. In contrast, neither sex, BMI, presence of hypertension nor diabetes showed any significant effect on eGFR improvement.

Conclusions: Renal function was significant different after normalisation of sUA in gout patients. We observed an improvement of eGFR which is consistent with recent studies. Interestingly, when initial renal function was at CKD IIIa level or higher (eGFR >45 ml/min/1,73 m²), renal outcome was even better. It strengthens the rationale to treat high sUA as soon as possible.

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