Reviewer's report

Title: Kidney disease is associated with early development of subcutaneous tophi in people with gout

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Reviewer: Anne-Kathrin Tausche

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General
The authors present comprehensive clinical and laboratory findings of 290 patients with an early diagnosis of gout of whom had 16.2% clinical evaluable tophi. Interestingly, in the investigated population tophi occurred even after relatively short time of disease duration (mean 5 to 6 years). After conducting appropriate statistical analyses impaired renal function as eGFR < 30 ml/min was significantly associated with and somewhat predictive for the occurrence of tophi. This was also accompanied by more severe clinical course of disease (documented by frequency of gout flares, pain severity and disease associated QOL), but not by laboratory serum markers as SUA-level (not reflecting urate load) and CRP (inflammation).

As there is no information about the cause of kidney dysfunction/disease suggest changing to “impaired renal function” in the title.

Minor points

Methods
p3 , line 3 ...by Wallace (11) and first attack and/or tophus?
p4, line 11 disease duration was defined as the time from the first clinical manifestation of gout (either attack or tophus); would be interesting to know how the initial diagnosis was made (physician and/or patient reported)

Results
Is there information about the use of low dose aspirin as this might contribute (additive to diuretic use) to relevant decrease of SUA excretion and possibly earlier urate accumulation? (Population is a high risk population as shown by the fact that 43% of patients with tophi had cardiovascular events).
Are there data about the prevalence of diabetes as relevant for renal function?

Discussion
It would be worth to discuss the influence of renal urate “handling” in renal impairment. As impaired renal function might be reasonable for lower excretion of SUA, earlier accumulation of higher amounts (load) of MSU (tophus development) may occur – not reflected by the punctual measurement of SUA-levels. (Also true for CRP which seems not reflect higher inflammation in
general).
Could you please provide information about the used adherence score (lit.)

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.