Factors Associated with Allopurinol Adherence and Treatment Outcome among Gout Patients

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Background: A serum uric acid (SUA) level of < 6.0 mg/dl has been widely accepted as therapeutic target for patients with gout. Recent studies implicate allopurinol nonadherence as a major barrier to achieve this target. However, factors that could affect this medication adherence are not clearly identified.

Objective: To identify factors associated with allopurinol adherence and SUA goal attainment in gout patients.

Methods: This study identified patients aged 18 years or older with a diagnosis of gout by 1977 ARA classification criteria for gout, who received at least 1 month of allopurinol and attended the out-patient clinic of Phramongkutklao Hospital during July 2016 - September 2017. Allopurinol adherence was defined as Medication Taking Behavior for Thai patients (MTB-Thai) scores > 21 points. Patient characteristics, comorbidities, concomitant medications, prescriber specialty, number of gout attack, and SUA were examined. Multivariate logistic regression was used to examine factors associated with allopurinol adherence and SUA target, defined as SUA < 6.0 mg/dl.

Results: A total of 226 patients with gout were included. Approximately half of the patients (43.4%) were adherent. Whereas, only one-third of them achieved SUA target (29.2%). Factors associated with allopurinol adherence in the multivariate analysis included disease duration (> 1 year) (odds ratio 0.1, 95% confident interval: 0.05 - 0.21), history of gout attack (> 2 times) (OR 0.14, 95% CI: 0.08 - 0.27), and prescriber specialty (rheumatologist) (OR 2.64, 95% CI: 1.28 – 5.43). Factors related to achieved SUA goal in the multivariable analysis were history of gout attack (> 2 times) (OR 0.21, 95% CI: 0.1 – 0.42), prescriber specialty (rheumatologist) (OR 2.01, 95% CI: 1.31 - 4.13), allopurinol dose escalation (OR 2.11, 95% CI: 1.17 – 3.79), current allopurinol dosage (> 100 mg) (OR 2.02, 95% CI: 1.11 – 3.65), and allopurinol adherence (OR 13.6, 95% CI: 6.52-28.39).

Conclusion: Among gout patients receiving allopurinol in our study, 70.8% could not reach the SUA goal and 56.6% are non-adherent. Allopurinol adherence is strongly associated with SUA goal attainment. The only modifiable factor related to allopurinol adherence is prescriber specialty. Whilst, modifiable factors affecting SUA goal attainment include prescriber specialty, allopurinol dose escalation, and current allopurinol dosage. Appropriate dose escalation and rheumatology referral should be considered to optimize gout treatment outcomes.

Keywords: Gout, Adherence, Allopurinol, Rheumatology