中文題目：痛風病人使用 febuxostat 和 allopurinol 對於甲狀腺疾病風險的比較

英文題目：The risk of thyroid diseases in gout patients treated with febuxostat compared with allopurinol

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Background: Gout represents most common inflammatory arthritis and occurs when hyperuricemia results in the formation and deposition of monosodium urate crystals in and around the joints. Urate-lowering therapy (ULT) is the cornerstone of various treatment strategies, including xanthine oxidase inhibitors (XOIs) and uricosuric agents.

Current evidence has demonstrated a close relationship of febuxostat and allopurinol with increased TSH levels, but without an apparent impact on either clinical or fT4 levels. However, few studies had explored the difference between effects of febuxostat and allopurinol on thyroid disease outcomes. Furthermore, the causative relationship between XOIs and thyroid diseases remains unclear.

Methods: A retrospective cohort study was conducted using TriNetx, a global federated health research network. We identified 653,947 adult patients newly diagnosed with gout (aged ≥19 years), receiving (1) Febuxostat, (2) Allopurinol between 2009 and 2021. Propensity score matching (1:1) was used to balance cohorts (febuxostat, allopurinol) on characteristics including age, gender, race, co-morbidities, urate, etc. Cox proportional hazard models were used to derive hazard ratios (HRs) and 95% confidence intervals (CIs). These cohorts were further subdivided by age, gender, race, co-morbidities, urate for subgroup analysis.

Results: After propensity matching, 9,386 patients for each cohort were identified for comparison. Patients who underwent Febuxostat treatment had a less prevalence of comorbidities, and were less likely to be prescribed ACE inhibitors and other cardiovascular medications. The incidences of thyroid cancer and hypothyroidism were significantly higher among patients who received Febuxostat compared to Allopurinol therapy [hazard ratio, HR=1.765, 95% CI: 1.000-3.114 for thyroid cancer; HR=1.145, 95% CI: 1.033-1.268 for hypothyroidism], and the incidence of nontoxic goiter was lower among Febuxostat group [hazard ratio, HR=0.737, 95% CI: 0.630-0.861]. Subgroup analysis indicated some age difference and racial disparity in risks of thyroid diseases between two cohorts. Some discrepancies were also found between different urate level.

Conclusion: This large cohort study found that the risk of thyroid diseases in gout patients treated with febuxostat was higher, compared with allopurinol. These findings may inform prudent decision-making regarding urate-lowering therapy for gout patients.