Utility and effects of human leucocyte antigen-B*58:01 testing on patient outcomes

Ching-Hua, Ke (柯靜華)1, You-Lin Tain (田祐霖)2, Chien-Ning Hsu (許茜甯)1*
1.Department of Pharmacy, 2. Division of Pediatric Nephrology, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

Abstract

Aims: Human leucocyte antigen (HLA-B*58:01) allele screening prior to allopurinol administration is recommended to prevent gene-mediated severe cutaneous adverse reactions (SCAR). The aim of this study was to examine the clinical utility and effects of HLA-B*58:01 testing on patient’s outcomes in a practice setting.

Methods: The electronic medical records covering diagnosis, laboratory results and prescription dispensing for patients who newly treated with allopurinol or tested for HLA-B*58:01 were obtained from a large medical organization in Taiwan between 2010 and 2014. The uptake of HLA-B*58:01 testing, incidence of allopurinol-associated SCAR, and changes in urate-lowering agent (ULA) utilization were assessed.

Results: Among 17,532 allopurinol new users, and the HLA-B*58:01 test was ordered for 2,844 of the patients when available between 2011 and 2014 in the study (21.76%). The allopurinol-related SCAR events decreased from 0.21% (22/4460) to 0 (0/2167) after the introduction of HLA-B*58:01 testing, accompanied by a gradual increase from 8% (326/4207) to 31% (674/2167) in genotype testing rate. However, the HLA-B*58:01 testing performed prior to allopurinol prescribing was 60.34% and approximately 40% of patients were tested after already taking allopurinol. A shift from allopurinol to other ULA regimens appeared among new allopurinol users.

Conclusion: HLA-B*58:01 test was associated with prevention allopurinol-induced SCAR. The clinical utility of genotype testing may not be consistent with recommendations for testing, and treatment alternatives are a competitive intervention associated with effective implications in a real-world setting.