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Experimental Dermatology / Volume 30, Issue 2 / p. 284-287

CONCISE COMMUNICATION

Investigating the association of Lamotrigine and Phenytoin-induced Stevens-Johnson syndrome/Toxic Epidermal Necrolysis with HLA-B*1502 in Iranian population

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First published: 20 November 2020

<https://doi.org/10.1111/exd.14240>

Citations: 9

Abstract

Previous studies have found an association between HLA-B*1502 allele and lamotrigine-induced Stevens-Johnson syndrome (SJS)/toxic epidermal necrolysis (TEN) spectrum in Han Chinese populations. This study aims to investigate the association between HLA-B*1502 and lamotrigine- or phenytoin-induced SJS/TEN in an Iranian population. The medical records of twenty-eight lamotrigine-induced SJS/TEN patients and twenty-five lamotrigine-tolerant controls as well as eight phenytoin-induced SJS/TEN and twelve phenytoin-tolerant controls were extracted between March 2013 and March 2019 from the university hospitals in Mashhad, Iran. The presence of HLA-B*1502 allele was determined using real-time polymerase chain reaction (PCR). Among lamotrigine-induced patients with SJS/TEN, 11 (39.3%) patients tested positive for the HLA-B*1502 while only 3 (12.0%) of the lamotrigine-tolerant controls tested positive for this allele. The risk of lamotrigine-induced SJS/TEN was significantly higher in patients with HLA-B*1502, with an odds ratio (OR) of 4.74 [95% confidence interval (CI) 1.14–19.73, $p = 0.032$]. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of HLA-B*1502 for lamotrigine-induced

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tolerant controls tested positive for HLA-B*1502 allele. The risk of phenytoin-induced SJS/TEN was not higher in the patients with HLA-B*1502 (OR = 0.467 [95% confidence interval (CI) 0.065-3.34, $p = 0.642$]). Lamotrigine-induced SJS/TEN is associated with HLA-B*1502 allele in an Iranian population but this is not the case for phenytoin-induced SJS/TEN.

CONFLICT OF INTERESTS

None of the authors has any conflict of interest to disclose.

Supporting Information

Filename	Description
exd14240-sup-0001-TableS1-S2.doc Word document, 35.5 KB	Table S1. Multiple logistic regression results. Table S2. Demographic characteristics of study population, IQR, interquartile range; SD, standard deviation.

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