

Diversity of HLA-B75 family genes in the Southern population of Thailand in carbamazepine-induced Steven-Johnson syndrome and toxic epidermal necrolysis for clinical implementations

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Statement of the Problem: Carbamazepine (CBZ) is the most common drug widely used in the treatment of chronic neuropathic pain, epilepsy, or bipolar disorders. Previous studies in Han Chinese, and other southeast asian areas reported the association of HLA-B*15:02 with CBZ induced Steven-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN), which are unpleasant life-threatening reactions. However, there has been other HLA-B75 families such as HLA-B*15:08, HLA-B*15:11, and HLA-B*15:21 associated with CBZ-induced SJS/TEN in southeast asian patients, which are located near Southern Thailand. A retrospective study was conducted to investigate the HLA-B75 family distribution within Southern Thailand and neighboring areas.

Methodology & Theoretical Orientation: 150 healthy Southern Thai blood donors who have been in the area for more than three generations were recruited. DNA has been isolated from EDTA blood and genotyped using sequence-specific oligonucleotides (PCR-SSOs) to analyse the type of HLA-B allele. This study has been authorised by the Ethics Review Board of Rangsit University.

Findings: Among all 150 healthy Southern Thai population, the most recurrent allele frequency was HLA-B*15:02 at 8.33% and 0.33% for other HLA-B alleles found (HLA-B*15:08, -B*15:11, and -B*15:21). Additionally, HLA-B*15:02 was present in all Southeast asian areas such as Malaysia Peninsular Malay, Indonesia, Vietnam and Singapore Chinese Han. This includes other HLA-B75 family, especially HLA-B*15:21 and -B*15:11 in some populations with no statistical significant difference in allele frequency when compared to Southern Thailand (p-value > 0.05).

Conclusion & Significance: Conclusively, the HLA-B*15:02 allele and other HLA-B75 family distribution plays a vital role for clinical pharmacogenetics testing to prevent CBZ-induced SJS/TEN in southeast asian patients.

Biography

Lisa Vorasatit is a high school student in Shrewsbury international school currently studying Biology, Chemistry and Maths as her major. Her passion for medical sciences has led her to participate in activities such as shadowing a doctor at the Bhumirajanagarindra Kidney Institute Hospital, organising fundraising events as a habitat for humanity president to build house for people who are in need, and most recently conducted a lab research at Ramathibodi Hospital where she gained research experience via extracting DNA samples from southern Thai patients. To further strengthen her lab skills, she has taken part in Laboratory works in both organic and inorganic chemistry.