ADVERSE DRUG REACTIONS, INCLUDING SJS, TEN

HLA GENE TESTING & CARBAMAZEPINE-INDUCED STEVENS-JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS IN PATIENTS OF ASIAN ETHNICITY

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Introduction: Adverse drug reactions account for 6.5% of hospitalizations in North America. Stevens-Johnson syndrome (SJS) and Toxic epidermal necrolysis (TEN) are life-threatening dermatological conditions, often a complication of medication use.
Carbamazepine (CBZ) is approved for the use of epilepsy, trigeminal neuralgia and bipolar disorder. SJS/TEN occurs in 1-10 per 10 000 patients taking this medication. The development of SJS/TEN is associated with variable drug metabolism and presence of an HLA genetic variation. HLA-B*15:02 and HLA-A*31:01 haplotypes can produce a hyperimmune response in the setting of carbamazepine use in patients of Asian and European descent respectively.

Objective: The U.S. Food and Drug Administration (FDA), along with the Canadian pharmacogenomics Network for Drug safety recommend all patients with suspicious aforementioned ethnic backgrounds for these HLA haplotypes be genetic tested prior to initiating CBZ.
However, at-risk patients continue to be started on CBZ without genetic testing. Our goal was to explore the current standard of practice of genetic testing, as to our knowledge, there has yet to be any data representing this.

Materials and Methods: We created a 12 question survey and distributed to neurologists in Canada (pediatric and adults) as they frequently prescribe CBZ. Our hypothesis was that there was a discordance between the standard of practice and the recommendation by the FDA.

Results: The survey results indicated that HLA gene testing is rarely done prior to initiation of CBZ in patients of Asian ethnicity in Canada. In addition, there was a limited knowledge of standard of care, cost and availability of HLA gene testing. The association between the HLA-B*15:02 in patients of Asian ethnicity and the potential for CBZ-induced TEN was not widely recognized.

Conclusions: We hope that this study generates attention to this topic, and that we can standardize genetic testing prior to CBZ initiation for at-risk ethnicities within Canada.