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HLA-B*48:01 and HLA-B*55:01 frequency in healthy thai population

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Penicillin, an antibiotic included in the beta-lactam (BL) class, is commonly used to treat bacterial infections in adults and children. It has been reported that approximately 10-20% of children who have received antibiotics in the beta-lactam class have developed a hypersensitivity reaction. In previous studies, it has been proven that HLA-B*48:01 has an association with BL hypersensitivity in Thai children (OR = 37.4, 95%CI: 1.69-824.59; p = 0.016), and HLA-B*55:01 has an association with penicillin hypersensitivity (OR = 1.41, 95%CI: 1.33–1.49; p = 2.04 x10-31) in European ancestry. The aim of this study is to explore whether there is a distribution of HLAB*48:01 and HLA-B*55:01 in healthy Thai individuals. 200 unrelated healthy Thai individuals were recruited in this study. HLA B alleles using the Lifecodes HLA SSO typing kits (Immucor, West Avenue, Stamford, USA). We found that the HLA-B alleles that show the most frequency in healthy Thai individuals were HLA B*46:01 (14.25%), HLA-B*40:01 (7%), HLA-B*58:01 (7%), HLA-B*15:02 (6.75%), HLA-B*13:01 (6.25%), HLA-B*44:03 (4.75%), HLA-B*51:01 (4.25%), HLA-B*52:01 (4.00%), HLA-B*35:05 (3.00%), and HLA-B*40:06 (2.75%). Furthermore, there was not much distribution between HLA B*48:01 (0.25%) and HLA-B*55:01(0.25%) in Thais. Interestingly, the distribution of HLA-B*48:01 was more prominent in Asian individuals: 2.88% of Japan, 3.56% of South Korea, 1.16% of Hong Kong, 1.00% of China, and 8% of Philippines. Whereas, HLA-B*55:01 has 3.60% in Europeans and less than 1% in Asians. Thus, the distribution of pharmacogenetics markers could be used for screening among different ethnicities before initiation of penicillin treatment to avoid hypersensitivity reactions.

Biography

My name is Nicha Soponpongpipat. I had completed grade 12 at Mahidol International Demonstration School, Thailand. I'm interest in studying about medicine which has led to the pharmacogenetics research. This pharmacogenetics researcher has provided an inspiration and experience for entering the faculty of medicine in the future.

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