

Analysis of the polymorphism in orexin receptor 1 gene in association with obstructive sleep apnea

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Obstructive sleep apnea (OSA) is a sleep disorder characterized by repetitive pauses in breathing during sleep, resulting in reduction of blood oxygen concentration (hypoxia) and sleep fragmentation. The risks of undiagnosed obstructive sleep apnea include reduce quality of life, excessive daytime sleepiness, hypertension, stroke, and mortality. OSA is a multifactorial and complex disease with a strong genetic basis, especially those that affect obesity and sleep regulation. In this study, single nucleotide polymorphisms (SNPs) in coding sequence of orexin receptor 1 gene was analyzed for association with OSA. A total of 50 OSA patients and 23 healthy controls were enrolled in this study. The blood was withdrawn from all subjects and DNAs were extracted using commercial DNA extraction kit. The SNP, rs2271933, which located in coding sequence of the orexin receptor 1 was genotyped using high-resolution melting analysis, and confirmed the sequence by sequencing. The difference in genotype distribution between patient and control was assessed by Chi-square test of SPSS version 14.0. The result revealed that the SNP, rs2271933, showed no significant association with risk of OSA (P value = 0.051). However, there was a limitation in this study, the number of control was about two times lower than OSA group. Further study is required by increase the number of control, and analyze others SNPs to investigate the polymorphism in orexin receptor 1 gene and susceptibility to OSA.

Biography

Siriporn Chatsuriyawong is now a Ph.D student in Molecular Biology Program of Faculty of Medicine, Srinakharinwirot university. Her thesis is searching for biomarkers of obstructive sleep apnea (OSA). One of her research work had been presented as poster in "International Conference on Biotechnology for Healthy Living", in Thailand, during October 20-22, 2010, in the title of "Analysis of the polymorphism in serotonin receptor gene 3A (HTR 3A) in obstructive sleep apnea". Now, she is analyzing the SNPs in orexin receptor -1, and -2 genes for association with OSA.

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