Spotlight on Leucin-Rich Repeat Kinase 2 (LRRK2) G2019S Mutation and Parkinson's Disease in Egyptians

Thomas Gasser El Desoky ES, Khedr EM, Khalil MS

Abstract:

Aim: Many causative genes and susceptibility loci have been identified to be associated with Parkinson's disease (PD) in different ethnic populations. One of these genes is the Leucin-rich repeat kinase 2 (LRRK2) gene. The G2019S substitution in that gene is the most common mutation identified to co-segregates with PD. One of the significant mutations in LRRK2 linked to PD is the G2019S which has been found associated with neuronal impairment and loss of dopaminergic neurons. Furthermore, new monoclonal antibody assay has been developed to quantify LRRK2 G2019S kinase pathway activity in Parkinson's patients. This type of mutation has been investigated in the North part of Egypt (Alexandria and nearby region), which showed an incidence of 9.7% of heterozygous mutation in LRRK2 G2019S in a sample of Egyptians with sporadic PD. We investigated the same mutation in 69 Egyptian patients with sporadic PD and 96 ethnically matched controls who all were inhabitants of Upper Egypt to find out if it could be a susceptibility gene for PD among Egyptians. Place and Duration of Study: Departments of pharmacology, neurology, and clinical pathology.

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