

Role of Cannabinoid CB2 Receptor Gene (CNR2) Polymorphism in Children with Immune Thrombocytopenic Purpura in Beni-Suef Governorate in Egypt

Dina A. Ezzat¹, Amira A. Hammam², Waleed M. El Malah¹, Rasha A. Khattab², Eman M. Mangoud¹

Departments of ¹Pediatrics and ²Clinical Pathology, Faculty of Medicine, Beni Suef University, Beni Suef, Egypt.

The cannabinoid system is involved in the immune regulation by modulation of Th cells type 1 and 2. It is composed of the CB2 receptor which is expressed at 10 to 100 folds greater levels on immune cells than the CB1 receptors. The CB2 is encoded by the cannabinoid CB receptor gene (CNR2) gene. This study aims to investigate the polymorphism in CNR2 gene variation rs 35761398 (Q63R) in Egyptian children with immune thrombocytopenic purpura and to investigate the relation between this gene polymorphism and either the susceptibility to or the chronicity of the disease. Forty children diagnosed as ITP were included in this study and 20 healthy children as normal control. CNR2 gene was investigated in those children by PCR RFLP technique (restriction fragment length polymorphism). CNR2 genotyping revealed that 45% of ITP patients had the QR heterotype, 50% had the RR homotype and 5% had QQ, the wild type with significantly higher frequency of homomutant genotype in comparison to controls. The relative odds ratio suggested a double risk for developing ITP in RR homotype (OR 2.152). A significant overrepresentation of the RR genotype and of R allele was observed in the chronic patients ($P=0.002$ and 0.003 , respectively). The associated risk to develop chronic ITP increased more than two folds for the RR homotype (OR=2.854). In conclusion, this study confirms the role of CNR2 Q63R polymorphism in the susceptibility to ITP in children and chronicity of the disease.