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Study of KIAA0319, DYXIC1 and DCDC2 gene polymorphisms in children with dyslexia in Indian population

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Biography

Shilpa Reddy has done MBBS in 1997 to 2002 from BM Patil Medical College, Bijapur, and Karnataka. Master Degree in Biochemistry from 2004 to 2007 at Gandhi Medical College, Hyderabad. PhD in Clinical Genetics, NTRUHS 2017.

Abstarct

Introduction: Dyslexia is a typical learning disability that does not affect intelligence but causes problems with reading, writing, and spelling. It is influenced by certain genes, due to which several researchers have attempted to identify the susceptible gene. Dyslexia is incurable and diagnosis is difficult because it always overlaps with other learning disabilities. Hence, timely assessment and intervention consequently give the best results. Therefore, our aim of the present study was to find the association between dyslexia and single nucleotide polymorphisms (SNPs) in several candidate genes like DYX1C1, KIAA0319, and DCDC2 in Indian population.

Methods: 103 dyslexic individuals and 100 controls in the age group between 6 to 15 years were taken. Thirteen SNPs in the KIAA gene, seven SNPs of DCDC2, and three SNPs of the DYX1C1 gene were analyzed by the Mass Array technique.

Results: The association of dyslexia with SNPs rs3756821, rs6935076 and rs4576240 of the KIAA gene was found significant. A significant association was found with rs600753 of the DYX1C1 gene and dyslexia and we could not find any association of the DCDC2 gene with dyslexia.

Conclusions: Prerequisite genetic analysis is necessary for the diagnosis of dyslexia as it is a crucial educational barrier. Treatment is known to be most effective if dyslexia is identified in the early stages for effective intervention for children before they experience prolonged reading failure. Further, it helps in prenatal diagnosis for early intervention.

Keywords: Dyslexia, DCDC2, DYX1C1, KIAA gene, SNP.

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