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EVALUATION OF THE SINGLE NUCLEOTIDE POLYMORPHISM's IN KIAA GENE CONTRIBUTING TO DYSLEXIA SUSCEPTIBILITY IN SOUTH INDIAN POPULATION

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ABSTRACT

INTRODUCTION: Dyslexia is a hereditary neurological disorder that manifests as an unexpected difficulty in learning to read despite adequate intelligence, education, and normal senses. The prevalence of dyslexia ranges from 3 to 15% for the school aged children.

BACKGROUND: Studies in different populations have established associations between Dyslexia and single nucleotide polymorphisms (SNPs) in a number of candidate genes like DYX1C1, KIAA0319. Very few studies are done in India.

METHODS: 100 dyslexic individuals and 100 controls in the age group between 6 to11 years were taken. 13 SNP's in KIAA gene were analyzed by Mass Array technique.

RESULTS: The Male predominance was noted in dyslexia cases (P value <0.0001) in the Telangana population. There is significant association of dyslexia with increase in un conjugated biluribin levels (in the first 3 weeks of life) with P value of <0.0001.Allelic association of 13 SNPs in KIAA gene was done .The association of dyslexia with SNPs rs 3756821, rs 6935076, rs 4576240 was found significant with P value.

CONCLUSION: The present study is the first study on the genetic markers (SNPs) associated with dyslexia in the state of Telangana and the second study in India. The importance of this study is that 100 dyslexic children and 100 controls are taken which has given a statistical significant association with SNPs of KIAA gene. Since dyslexia is a major educational problem, there is a need for detailed genetic analysis to find out the genes in the ethnic population which are responsible for dyslexia.

KEYWORDS: Evaluation of the Single Nucleotide Polymorphism's