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Familial Patterns and Biological Markers of Dyslexia

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ABSTRACT Dyslexia is one of the most common learning disability. Though dyslexia is a major educational problem, studies on biological aspects of dyslexia are very limited in India. Here we report prevalence, inheritance patterns and biological markers of dyslexia in 179 selected families from South India. Families were ascertained through probands attending special schools for dyslexic students as well as from regular schools from Karnataka state, South India. Prevalence and types of inheritance patterns were recorded. A questionnaire concerning allergies, asthma, arthritis, migraine etc. was used to assess the prevalence of immune disorders. Occurrence of chicken pox, measles, mumps, delayed milestones, birth complications, motor coordination problems, short sight and left handedness, fatty acid deficiency signs were recorded in the dyslexic probands. Among school children, prevalence of dyslexia is found to be 9.87% and in the selected families the prevalence is 28.32%. Based on the affectedness, dyslexia phenotypes were classified as severe and mild deficits. Mild deficits were better compensated than the severe deficits. Among the selected families autosomal dominant mode of inheritance was found to be more prevalent. Consanguinity plays a major role in familial aggregation of dyslexia. Allergy, migraine, delayed milestones, low level of blood cholesterol and certain fatty acid deficiency signs were found to be associated with dyslexia. Since complex array of symptoms are associated with dyslexia an integrated research approach is needed for effective diagnosis and remediation of dyslexia.