Status of Inheritance Pattern of Blindness in Blind People Supported by Yazd Province's Welfare Organization

Author(s): M.R. Besharati, S.M. Kalantar *, M.H. Sheikhha and S.M. Seyed Hassani

Article abstract:

Status of Inheritance Pattern of Blindness in Blind People Supported by Yazd Province's Welfare Organization MR. Besharati MD , SM. Kalantar PhD , MH. Sheikhha PhD , SM. Seyed Hassani MD Received: 13/05/06 Sending for Revision: 26/07/06 Receiving Revised Manuscript: 17/10/06 Accepted: 12/11/06 Background and Objective: It is estimated that 148 million people worldwide, the vast majority of them in developing countries, are suffering from blindness or severe visual disorders. Understanding of the different kinds of blindness epidemiology and its inheritance pattern, genetic counseling and prenatal diagnosis are important factors in prevention and treatment of blindness. This survey was designed based on the above facts. Materials and Methods: This cross-sectional study was done on 109 blind people. The individuals were interviewed based on standard genetic counseling procedure. Blood samples were collected from the cases with inheritance pattern and then stored in a DNA bank. The data were analyzed by using SPSS software and $\chi 2$ test. Results: From the total of 109 individuals, 73 were male (67%) and 36 were female (33%). More than half of them (53.2%) were detectable in patients aged less than one year old. The most common cause of blindness and low vision was retinitis pigmentosa in 35 cases (32.1%) followed by globe dysgenesis in 18 cases (16.5%). Consanguinity in different degrees and a positive familial history of blindness were detected in 76 and 66 patients respectively. There was no genetic pattern in ten

pedigrees. In the rest, the genetic patterns were as follows 6.4% autosomal dominant, 33.9% autosomal recessive, and 11.1% X-linked recessive. In total the inheritance pattern was detected in 56 familial pedigrees which suggested single gene disorder with the relative frequency of 51.4% in the studied population. Conclusion: This study may help physicians and genetic counselors to understand the importance of genetic inheritance in blindness and low vision. In addition, we believe our findings will possibly shed a new light on the future plans involving diagnosis and prevention of visual blindness. Key words: Blindness, Genetic Counseling, Inheritance Pattern, Blind