عنوان مقاله:

A Splicing Variant in OCRL Gene Might Explain the Second Case of Lowe Syndrome in Iran

محل انتشار:

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خلاصه مقاله:

Lowe syndrome is a condition that primarily affects eyes, brain, and kidneys. This disorder follows X-linked recessive mode of inheritanceand it occurs in males mainly. Mutations in OCRL (located at Xq۲۵) gene can cause accumulation of phosphatidylinositolbisphosphate and disturbed actin cytoskeleton remodeling. There are ۲۶۸ mutations in OCRL gene causing Lowe syndrome or Dentdisease ۲ in HGMD database, however ۱۰ - ۲۰% of Lowe syndrome suspects remain undiagnosed at molecular level. Here we presenta male case of Lowe syndrome with characteristic features. Comprehensive clinical examination and genetic counseling were performed.Sanger sequencing was employed to investigate the possible OCRL mutations and we identified a donor splice site variant(NM-۰۰۰۲۷۶: c.۲۴۶۹ + ۱G > A) in hemizygous state. This is a pathogenic variant according to the ACMG standards and guidelinesand might explain the clinical features of the patient. This result is in accordance with the clinical diagnosis of Lowe syndromeand it is absent from ExAC, ۱۰۰۰ G, Iranome, GME, gnomAD Genome databases of healthy controls. In-silico analysis of this splicingvariant revealed that the position is highly conserved between species. Splicing prediction tools predicted some changes in splicingpattern of the OCRL transcript, elimination of some protein features, and malfunctioning the OCRL protein as a consequence of thisvariant. Accordingly, we proposed the c.۲۴۶۹ + ۱G > A variant might explain the clinical features in studied patient and be employedfor prenatal diagnosis of Lowe syndrome in the family.

کلمات کلیدی:

Splicing Variant, OCRL, Lowe Syndrome, Iran