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Genotype-Phenotype of Mevalonate kinase deficiency: a potentially life threatening disease

Dalia H. El-Ghoneimy[1]*, Rasha El-Owaidy[1], Nesrine Radwan[1]. Ghada Shousha[1], Hanan Abdel-Latif[1], Amira Fouad[1], Roba Al-Gaweesh[1], Rana Zakaria[1], Mostafa Al-Amin[1], I. Jéru[2], S. Amselem[2], Eman D. El-Desouky[3], Yehia El-Gamal[1], Zeinab A. El-Sayed[1], Shereen M. Reda[1], Elham Hossny[1]
*dalia.elghoneimy@gmail.com**
*Egypt**

[1] *Pediatric Allergy, Immunology and Rheumatology Unit, Ain Shams University, Cairo, Egypt.*
[2] *Institut National de la Santé et de la Recherche Médicale (INSERM), Université Pierre et Marie Curie (UPMC), Paris, France.*
[3] *Epidemiology and Biostatistics, NCI, Cairo University*

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Abstract

Background: Mevalonate kinase (MVK) deficiency (formerly known as hyperimmunoglobulin D syndrome) has different clinical presentation of variable severity, response to treatment and outcome. A link has been described between the underlying mutation in MVK gene and the resulting phenotype.

Patients and methods: Six patients presented with episodes of prolonged fever since early infancy were evaluated for possible MVK deficiency.

Results: Five patients are Egyptians and one patient was Syrian. They were 4 boys (67%) and 2 females (33%). The age at onset of their presentation ranged between 0.7-4 months with a median (IQR) of 3(1-4) months. Positive parental consanguinity was found in 5 patients (83%) . All patients have prolonged episodes of high fever (40 ^{0}C) , generalized lymphadenopathy and hepatosplenomegaly. Non-deforming arthritis was present in 5 patients (83%). Abdominal pain and chronic diarrhea were present in 3 patients (50%). No neurological deficit nor dysmorphic features was found in any of these patients. All patients had persistent leucocytosis, elevated ESR and CRP. Immunoglobulin D was elevated in one patient (203 mg/L). The mutation of the MVK gene have been identified in 4 patients were : p.H20Q (c. T60A) in the 2 brothers (one died); p.R388X (c.C1162T) in the Syrian girl (died); p. G 326 R (c.976G>A) in one patient (alive). Cause of death in the 2 patients was uncontrolled disease activity and macrophage activation syndrome. Anakinra was the best treatment to put patients in complete remission.

Conclusion: MVK deficiency could be a life threatening disease. Availability of genetic diagnosis will help in early diagnosis of suspected cases and support initiation of anakinra in severe cases.