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Letter to the Editor

Assessment of MEFV Gene Mutations in Exon 10 in Familial Mediterranean Fever Patients from Iranian Azeri and Turkish Population

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Dear Editor-in-Chief

Familial Mediterranean fever (FMF), the most frequent of the periodic fever syndromes, is an autosomal recessive disease, predominantly affecting people of Mediterranean descent, although recently it has been described in many other populations (1-3). Linkage between the gene responsible for FMF (*MEFV*) and the short arm of chromosome 16 was first shown in 1992. Mediterranean Fever (MEFV) gene was identified by positional cloning (2-3). Pyrin belongs to a class of proteins involved in the regulation of apoptosis and inflammation. In relation to 180 mutations in the MEFV are established causes of the disease, but 4–6 mutations usually account for a high percentage of MEFV genes in different ethnic populations (3, 4). Most of the mutations are located in exon 10 at the carboxyl-terminal portion of the protein. Three common founder MEFV mutations were initially found in exon 10: M694V, M680I and V726A (2-4). Due to the high frequency of mutations in exon 10 of this gene was studied. For that reason, the aim of the present study was to determine the Evaluation of MEFV Mutations in Exon 10 in Azeri Turkish FMF patients, most of who reside in the northwestern part of Iran.

The study group included 50 unrelated patients who were diagnosed as having FMF according to established clinical criteria (5). All patients were of Azeri Turk origin. Of the 50 referred patients, 29 (58%) were male. Twelve different genotypes were characterized among 50 our patients. Our results revealed that 41 of 50 (82%) FMF patients had at least one MEFV mutation; two patients were homozygotes and 39 heterozygotes for FMF-associated mutations. No mutations were detected in 9 patients (18%). M694V, V726A, and M680I are the prevalent mutations in this ethnic with the allele frequency of %32.9, %14.6 and %9.7, respectively. Consequently, R761H (4.9%) was the most frequent rare mutation in Iranian Azeri Turkish FMF patients.

A recent review of the literature finds the carrier frequency of FMF in Mediterranean and middle eastern populations to be as high as one in three to one in five (6). In one study, persons of Ashkenazi Jewish or Muslim Arabic origin share approximate odds of one in four (1:4.5 and 1:4.3, respectively) for carrying a defective gene for FMF (7, 8). The Turks are one of four cultural groups predominantly prone to develop FMF (9). The carrier frequency of this disease in our population is not known but its frequency in two of the other eth-

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nic groups, non-Ashkenazi Jews and Armenians is estimated at between 1:5 and 1:16 (7, 10). M694V is the most prevalent mutation in this cohort. The current data show the divergence of mutation spectrum in our population in which the V726A were more frequent than M680I; while in Turkish, (Table 1) patients M680I were the second most common mutation (9). R761H was the most frequent mutation among the rare mutations in our study group. The frequency of R761H is higher than that of M694I, a common mutation frequently reported in Arabs (3).

Table.1: Percent of the 3 most common MEFV mutations in different ethnic groups

Ethnic Group	M694V	V726A	M68I
Turks*	43.5	11.1	12
Iranian Azeri	32.9	14.6	9.7

*Data were compiled from references for Turks (9) and Iranian Azeri Turks (present study)

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