Increased frequency of psoriasis in the families of the children with familial Mediterranean fever

Sirs,

Familial Mediterranean fever (FMF) is an autosomal recessive hereditary inflammatory disease characterised by recurrent attacks of fever, polyserositis manifested by abdominal and chest pain and arthritis. FMF represents the most common form of periodic fever syndromes and is estimated to affect more than 100,000 patients throughout the world, predominantly Sephardic Jews, Turks, Arabs, and Armenians (1-3).

FMF is known to be associated with vasculitis, spondyloarthropathies, Behçet's disease and inflammatory bowel disease (4-6). The typical skin finding of FMF is erysipelas like erythema (2). However, psoriasis is another skin disease that was reported to be associated with FMF (5, 7, 8).

Psoriasis is a common disease affecting approximately 2% of the population (9, 10). Skin manifestations of the disease are raised, well-demarcated, erythematous oval plaques with adherent silvery scales (9, 10). There are many clinical sub-types, with the most common is being psoriasis vulgaris, which accounts for approximately 85-90% of all psoriasis patients (9, 10). Although there are some case reports, to our knowledge relationship of psoriasis with FMF has not been documented in a cohort yet (5, 7, 8). The aim of our study was to investigate the prevalence of psoriasis among patients with FMF and among the family members (mother, father, sibling) and second-third degree relatives.

The study group consisted of 202 FMF cases that were diagnosed according to the criteria of Yalçınkaya-Ozen *et al*. In the same time intervals, 200 healthy control subjects were recruited to the study. Besides, 238 JIA cases that were diagnosed according to ILAR criteria (International League of Associations for Rheumatology) and who were followed up in Istanbul University, Cerrahpasa Medical Faculty, Department of Paediatric Rheumatology between August 2013 and December 2013 have constituted the sick control group. Patients with juvenile psoriatic arthritis in the JIA group were excluded from the study. Investigators (KB, MG, MS) have performed physical examinations of all FMF and control subjects, than conducted face-to-face negotiations with all of them in order to explore family members and second-third degree relatives in terms of psoriasis. Ultimately, the presence of psoriasis was confirmed by a dermatologist among the suspected patients, control subjects, family members and close relatives.

The demographic characteristics and study results of three groups were summarised in Table I.

Table I. Demographic characteristics and study results of the patients and healthy controls.

	Mean age at investigation (year)	Mean age at disease onset (year)	Mean age of diagnosis (year)	Female/Male ratio	Psoriasis frequency in families n (%)
Familial Mediterranean fever (n=202)	10.5 ± 5 years	4.7 ± 3.4 years	7.4 ± 3.7 years	97/105	41 (20.3%)
Juvenile idiopathic arthritis (n=238)	10.7 ± 4.3 years	7.5 ± 3.4 years	8.4 ± 3.6 years	117/121	10 (4.2%)
Healthy controls (n=200)	3.02 ± 2.1 years	-	-	102/98	12 (6%)

Only one case among the FMF group was found to have psoriasis. No single case of psoriasis was detected among healthy controls or JIA patients. The family history of psoriasis was positive in 41 (20.3%) of 202 FMF patients (M:25, F:16), 10 (4.2%) of 238 JIA patients (M:3, F:7) and 12 (6%) of 200 healthy children (M:5, F:5). Finally, diagnosis of psoriasis was confirmed by a dermatologist in relatives of 41 FMF cases that 5 mother and father, 1 sibling, 11 grandmother and grandfather, 12 aunt and uncle and 12 cousin were found to have psoriasis. There were not two or more family members that have been suspected to have psoriasis within the same family, namely there was not any clustering in the same family. The increased incidence of psoriasis among the parents and close relatives of cases with FMF than that of cases with JIA and healthy controls was statistically significant ($p<0.0001$). A strong association between having FMF and having a family member or close relative with psoriasis was found with an odds ratio of 3.89.

In the present study, we have detected a higher incidence of psoriasis among family members and close relatives of patients with FMF. The association of FMF with psoriasis has been reported in the medical literature only as case presentations (7, 8).

In the study of Langevitz *et al*. (5), association of FMF and seronegative spondylarthropathy was investigated. However, psoriasis was investigated only among a small group (n=160) of 3,000 FMF patients that had chronic arthritis and three patients were found to have psoriatic arthritis. Langevitz *et al*. (5) have not reported any family history in these patients. Association of FMF with vasculitis, spondyloarthropathies, Behçet's disease and inflammatory bowel disease has been clearly reported (3-6). However, its association with psoriasis has only been reported as case reports (5, 7, 8). In our study, we detected an increased incidence of psoriasis in family members and close relatives among the FMF patients group. This study has importance since it is the first study investigating the rate of psoriasis among childhood FMF patients and their families. These two diseases could be due to abnormalities involving similar autoinflammatory pathways. Further studies with a large cohort investigating the prevalence of FMF and the possible mutations involving MEFV gene exons among psoriasis patients or vice versa should be performed to enlighten the pathophysiology and association of these two diseases.

K. BARUT, MD
M. GULER, PhD
M. SEZEN, MD
O. KASAPÇOPUR, MD

Department of Paediatric Rheumatology, Cerrahpasa Medical School, Istanbul University, Turkey.

Address correspondence to:
O. Kasapçopur,
Atakoy 1. Kisim D-43/ 8,
34750 Istanbul, Turkey.
E-mail: ozgurkasapcopur@hotmail.com
ozgurkc@istanbul.edu.tr

Competing interests: none declared.

References

1. OZEN S, BILGINER Y: A clinical guide to autoinflammatory diseases: familial Mediterranean fever and next-of-kin. *Nat Rev Rheumatol* 2014; 10: 135-47.
2. SOZERI B, KASAPCOPUR O: Autoinflammatory diseases in childhood. *Mod Res Inflamm* 2014; 3: 7-18.
3. TUNCA M, AKAR S, ONEN F *et al.*: Familial Mediterranean fever (FMF) in Turkey: result of a nationwide multicenter study. *Medicine* 2005; 84: 1-11.
4. OZDOGAN H, ARISOY N, KASAPCOPUR O *et al*.: Vasculitis in familial Mediterranean fever. *J Rheumatol* 1997; 24: 323-7.
5. LANGEVITZ P, LIVNEH A, ZEMER D, SHEMER J, PRAS M: Seronegative spondyloarthropathy in familial Mediterranean fever. *Arthritis Rheum* 1997; 27: 67-72.
6. BESER OF, KASAPCOPUR O, COKUGRAS FC *et al*.: Association of inflammatory bowel disease with familial Mediterranean fever in Turkish children. *J Pediatr Gastroenterol Nutr* 2013; 56: 498-502.
7. BODUR H, SECKIN U, ESER F: Coexistence of familial Mediterranean fever and psoriasis in a patient with seronegative spondyloarthropathy. *Rheumatol Int* 2006; 26: 489-96.
8. YENIAY BS, KARACA NE, YUKSEL SE, MIDYAT L, KUTUKCULER N: Juvenile psoriatic arthritis carrying familial Mediterranean fever gene mutations in a 14-year-old Turkish girl. *J Dermatol* 2007; 34: 344-8.
9. AUGUSTIN M, RADTKE MA, GLAESKE G *et al*.: Epidemiology and Comorbidity in Children with Psoriasis and Atopic Eczema. *Dermatology* 2015; 231: 35-40
10. ALWAN W, NESTLE FO: Pathogenesis and treatment of psoriasis: exploiting pathophysiological pathways for precision medicine. *Clin Exp Rheumatol* 2015; 33 (Suppl. 93): S2-6.