The frequency of familial Mediterranean fever in an emergency unit

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ABSTRACT

Approximately 90% of patients with familial Mediterranean fever (FMF) complain of recurrent attacks of fever and abdominal pain of various severities. Prior to the diagnosis of FMF, the majority of patients are admitted to emergency units with a suspicion of acute abdomen pain and at least half of them undergo unnecessary abdominal interventions. The purpose of this study is to determine the frequency of FMF among the patients who are admitted to emergency units for acute abdominal pain. One hundred consecutive patients who were admitted to an emergency unit in Istanbul, Turkey, with acute abdominal pain were screened for FMF. When the definite cases were considered, a frequency of 2% was encountered which was significantly high compared to the frequency of FMF in Turkey. Physicians working in emergency units should include FMF in their differential diagnosis list when evaluating a patient with acute abdominal pain, especially in countries where the disease is prevalent.

Introduction

Familial Mediterranean fever (FMF) is an autosomal recessive disorder, mainly effecting non-Ashkenazi Jews, Armenians, Turks and Arabs. It is characterised by recurrent episodes of fever, peritonitis, pleuritis and/or synovitis (1). The severity of these attacks differs among patients and also among the attacks of an individual patient. Some are impossible to differentiate from an acute abdomen. Physical examination reveals rebound tenderness suggesting peritoneal irritation, and an acute phase response is noted. Prior to the diagnosis of FMF, 30–50% of the patients undergo unnecessary surgical interventions such as appendectomy, or cholecystectomy (2).

This study aims to determine the frequency of FMF among patients who present with acute abdominal pain to an emergency unit in Istanbul, Turkey.

Patients and methods

One hundred consecutive patients, who presented with acute abdominal pain to the emergency unit of Haydarpasa Numune Education and Training Hospital, were included in the study. This unit has one of the highest emergency admission rates (approximately 200 patients/day) among hospitals in Istanbul.

Patients who presented with acute abdominal pain were questioned by a standard screening questionnaire which was previously designed by the Rheumatology Division of Cerrahpaşa Medical Faculty (2). (Fig. 1). The questionnaire was applied to the patients by the general surgeon (ED) working in the emergency unit outpatient clinic. The patients who gave affirmative answers to questions 1 and 2 and/or 3 and/or 6 were contacted by a rheumatologist for a second interview. ACR criteria (3) were used to confirm the diagnosis of FMF and to discriminate definite from probable disease.

Results

Among the 100 consecutive patients with abdominal pain who were questioned for FMF, 53 were male and 47 female. The mean age of these patients was 49, 4±21, 9 years (range 4-80 years). The final diagnoses of these patients are given in Table I.

There was recurrent abdominal pain in 26 of 100 patients. Twenty patients who reported recurrent abdominal pain less than 4 days duration, with fever or joint pain or symptom-free intervals where called back to the hospital to be interviewed by a rheumatologist. There was recurrent abdominal pain with symptom-free intervals in 15 of 20 patients, fever in 10 patients and joint pain in 10 patients.

After the examination and interview by

a rheumatologist, the diagnosis of FMF was definite in 2 and probable in 3 of the patients.

One of the definite cases was a 32-year-old male who already had a diagnosis of FMF and was prescribed colchicine, however, he had stopped taking his medication. The other patient was a 15-year-old girl who started to experience abdominal pain associated with fever approximately once every 2 months for one year prior to admission to the emergency unit. She also had a positive family history for FMF. She was referred to the rheumatology outpatient clinic of Cerrahpaşa Medical Faculty for further evaluation. At this centre, acute phase response was detected during an attack and she was homozygous for M694V mutation. She was put on 1.5 mg/day of colchicine and asked to attend regular follow-up visits.

According to the questionnaire there were three patients who were diagnosed as probable FMF. One of these patients was lost to follow-up. The second case was an 18-year-old young male who was operated for appendicitis at this admission. He had 2 abdominal pain attacks previously. However he did not complain of such attacks after the operation, had no family history of FMF and his genetic analysis for *MEFV* mutations was negative. We decided to follow this patient. The last case, a 60-year-old woman, whose symptoms and signs, when re-evaluated, were found o not be compatible with FMF.

The frequency of 2% of definite FMF cases found among admissions in an emergency unit for acute abdominal pain was significantly higher when compared to the overall prevalence of FMF in Turkey which has been reported as 0.1% (z=4.292; p=0.000) (7), but not different from the prevalence found in high risk regions like Tokat, a mid-Anatolian city (0.8%), (z=0.636; p=0.524) (8).

Discussion

Among 100 consecutive patients presenting to an emergency unit with acute abdominal pain who were screened for FMF, there were 2 patients with definite and one patient with probable FMF. One of these patients already had

Table I. The diagnosis of 100 patients admitted with abdominal pain to the emergency unit.

Diagnosis	n.
Acute appendicitis	22
Operated	9
Not operated	13
Cholecystitis	9
Operated	5
Not operated	4
Gynecological problems (PID, ovarian cysts, dysmenorrhea)	7
Gastrointestinal disease (peptic ulcer, dyspepsia)	7
Renal disease (Urinary tract infections, nephrolithiasis, cancer)	5
Heart disease (Pulmonary hypertension)	1
Other (ileus, bowel perforation, constipation, mesenteric lymphadenopathy)	5
FMF	2
Non-specific	42
Total	100

FMF SCREENING QUESTIONNAIRE

Name, Surname: Age, gender:
Birth place:
Mother and fathers origin:
Is there consanguinity between mother and father? Yes ( ) No ( )
Telephone: Date:
Address:
Name of the doctor filling this form:

1- Do you (or your child) have attacks of abdominal pain or chest pain which last 12 hours to 3 days since childhood?

2- Does fever accompany these attacks?

3- Do you (or your child) ever have pain, swelling or redness on your ankles or knees which generally recover in one week?

4- Were you (or your child) ever admitted to an emergency unit because of abdominal pain, chest pain, joint complaints or attacks of high fever?

5- Did you (or your child) ever refrain from going to school or work due to these attacks?

6- Are you (or your child) totally symptom free between attacks?

7- Were you (or your child) ever diagnosed as familial Mediterranean fever, FMF, rheumatic fever, rheumatism involving your heart, inflammatory rheumatism? Were you ever prescribed monthly penicillin injections?

8- Do any of your relatives (mother, father, brothers, sisters, children, aunts, uncles and their children?) have complaints similar to the attacks described above?

9- Among your relatives, is there anyone who had an appendicectomy or has a long standing kidney disease?

10- Did you (or your child) ever use a drug called colchicine?

Fig. 1. FMF screening questionnaire

a diagnosis of FMF, but was not taking colchicine regularly. The diagnosis of FMF was made during this screening study in the other patient who had 3 prior febrile abdominal attacks and a family history for FMF.

As far as we know this is the first study which aims to determine the frequency of FMF among emergency unit admissions due to acute abdominal pain. The wide age range of the study group (4 to 80 years) increases the relevance of our findings.

Abdominal pain is the first most common manifestation of FMF and occurs at some point during the lives of more than 90% of FMF patients (4). The abdominal pain of FMF is due to transient peritoneal irritation which presents as acute abdomen. Almost half of the patients undergo exploratory laparotomy, appendectomy or cholecystectomy. Turkish FMF study group data show that history of appendectomy was present in 19% of 2838 patients (4). In a retrospective study by Kaşifoğlu *et al*. appendectomy was performed before the diagnosis of FMF in 68 out of 254 patients (26.6%) (5).

The prevalence of FMF in Turkey is quite high ranging from 1/1000 to 8/1000 (6-9). The difference observed in the range depends on the geographical distribution of the disease within Turkey, highest values being observed in regions located in mid-Anatolia (10). We would probably have found more cases if this screening was performed in an emergency unit of a hospital located in one of these high-risk regions. Our study showed that FMF may be an important cause of emergency admissions for acute abdominal pain in a country where this disease is common. Early recognition of this disease by physicians working in emergency units could prevent unnecessary interventions. Besides, early diagnosis and initiation of colchicine therapy will save the patients from developing secondary amyloidosis, a life-threatening complication of FMF.

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