Incidence of pericardial effusion during attacks of familial Mediterranean fever

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PATIENTS AND METHODS
Two dimensional, M mode, and Doppler echocardiographic examinations were performed during 55 consecutive FMF attacks in 42 patients (15 female, 17 male). Echocardiographic study was carried out by one of the authors (ET or SA) and reviewed by the other one, who was aware of the diagnosis of FMF but unaware of the presence or absence of chest pain. Typical attacks of FMF consisted of fever and serositis including peritoneum, synovium, and pleura lasting 1–4 days. Attacks of FMF were recurrent and self limited. FMF was diagnosed according to established clinical criteria or molecular analysis when appropriate (in 37 patients).¹ None of the patients had amyloidosis. Patients who had evidence of congestive heart failure, uraemia, or other systemic illnesses known to be associated with pericardial disease were excluded from the study. A detailed cardiac physical examination, 12 lead ECG, and chest radiography were performed for all patients. Presence of pericardial effusion was evaluated from the posterior wall of the left ventricle at end diastole by M mode and two dimensional echocardiography with a Sonos 5500 (Hewlett Packard, Andover, Massachusetts, USA) echocardiography machine. The presence of pericardial effusion was defined as ≥ 2 mm echo-free space between the pericardial layers of the left ventricular posterior wall at end diastole.

Age at onset of the disease, age at diagnosis, treatment with colchicine, and the type of FMF attack during the echocardiographic study were recorded for all patients. A signed informed consent form was obtained from each parent or patient.

RESULTS
The age of the patients ranged from 3.5–22 years (mean (SD) 10.9 (3.7) years). During the echocardiographic study 27 patients had been treated with colchicine for 6 months to 15 years (mean (SD) 45 (32.3) months), and the remaining 15 were not treated with colchicine. Chest pain was present in 24 of 55 attacks. None of the patients had other clinical findings, such as friction rub, suggesting pericarditis. All patients were found to have normal ECG and chest radiographic studies during the attacks. Echocardiographic study showed minimal pericardial effusion during two attacks of two patients (8 and 9 year old boys). The amount of pericardial effusion was 4 mm in the first and 6 mm in the second case. Effusions resolved spontaneously on control echocardiogram at the end of the attacks. The type of clinical exacerbations in patients who had pericardial effusion was chest attack type in one and abdominal attack type in the other case. Both patients with pericardial effusion had been taking colchicine (for six months and two years). Thus, the frequency of pericardial effusion diagnosed by echocardiography during the FMF attacks was found to be 2 in 55 (3.6%). Although echocardiographic examination did not show any effusion, the presence of chest pain strongly suggested pericardial inflammation in six attacks of three other patients.

FMF mutations were found in both alleles in 27 patients and in a single allele in seven patients. No mutation was detected in three patients. M694V was the most common mutation, followed by M680I and V726A. The mutation distribution was similar to that in patients with FMF in various studies from Turkey.³ Mutation of two patients with pericardial effusion were M694V/N726A and M694I/–. A second mutation could not be identified in the latter patient.

DISCUSSION
Although pericarditis is regarded as one of the clinical features of FMF,¹ pericardial involvement has not been mentioned much in large series of FMF.¹ Thus, whether pericarditis is a manifestation of FMF or a coexisting, intercurrent illness has been debated. Re-evaluation of pericardial involvement in a recent study showed a 0.7% prevalence of pericarditis in 1553 thoracic attacks of 3976 patients with FMF. This study clearly showed that pericarditis was a manifestation of FMF.³ Similarly, the prevalence of definite pericardial attacks has recently been reported as 1.4% (34 of 2468 patients) by the Turkish FMF Study Group.¹ Both studies show that pericarditis is a rare manifestation of FMF as compared with the other forms of serositis.

Why pericardium is not involved as commonly as other serosal membranes is unknown. It has been suggested that underdiagnosis may partly be responsible for the infrequent detection of pericarditis. If echocardiography were used to detect pericarditis in every attack of FMF (especially for chest attacks), it would be possible to detect pericardial attacks more frequently. Our present study, however, shows that pericardial effusion is not a frequent manifestation of FMF, even with the use of echocardiography. Only one prospective echocardiographic study was undertaken before ours, by Dabestani and colleagues.⁷ They reported a much higher (27%) prevalence of pericardial involvement in predominantly adult patients with FMF. However, Dabestani and colleagues described pericardial disease as an effusion in the...
pericardial space or pericardial thickening detected only by M
mode echocardiography. It is known that if two dimensional
and M mode echocardiography are used together, diagnostic
acuity of echocardiography to detect pericardial effusion is
increased. Since it is difficult to detect a thickened
pericardium with echocardiography, the reliability of
echocardiographic diagnosis is questionable. Thus, the high
prevalence of pericardial disease that Dabestani and col-
leagues found in their echocardiographic study may have
been an overestimation caused by the method used to define
pericardial disease.

Another possible explanation of this discrepancy is the
difference in the ages of the patients. Since pericarditis
tends to appear at a late stage of FMF, a higher prevalence
may be predicted in adult patients than in children.2 It is
known that colchicine is effective for the treatment of
recurrent, refractory pericardial effusions resulting from
miscellaneous causes other than FMF.3 Although colchicine
may prevent the occurrence of pericardial fluid in patients
with these disorders, no study to date has reported that col-
chicine can blunt any type of FMF attacks. Moreover, both of
our patients with pericardial effusion had been taking colchi-
cine.

Previous clinical studies and the results of our study show
that pericardial attacks are infrequent manifestations of FMF,
and routine echocardiographic screening is not necessary in
FMF attacks.

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Job strain and high work demands and lack of opportunity to control work
are related to increased risk of coronary heart disease in British
government employees

The Whitehall II study has followed prospectively over 10 000 London based civil servants
(government department employees) for a mean of 11 years, in particular identifying
those who developed coronary heart disease (CHD). Data were collected on known cor-
norary risk factors and self-reported questionnaires detailed such work characteristics as job
demands and decision latitude (degree of control over skill use, time allocation and authority
to make decisions).

Those with high scores in both areas were defined as having “job strain”. They proved to be
at the greatest risk of CHD, regardless of their coronary risk factors or domestic psychosocial
support (hazard ratio 1.57 (CI 1.26–1.96)). A high score for either of the components also led
to a higher risk of CHD.

The authors suggest the policy implications of their research are that strategies for work
place health promotion should rely on redesigning jobs by reducing psychological demands
and increasing individuals’ say in decisions about their work as well as offering more variety
in job tasks. The next step should be intervention studies to evaluate the utility of any such
changes.