

Correspondence



INSTRUCTIONS FOR LETTERS TO THE EDITOR

Editorial comment in the form of a Letter to the Editor is invited. The length of a letter should not exceed 800 words, with a maximum of 10 references and no more than 2 figures or tables; and no subdivision for an abstract, methods, or results. Letters should have no more than 4 authors. Financial associations or other possible conflicts of interest should be disclosed.

Letters should be submitted via our online submission system, available at the Manuscript Central website: <http://mc.manuscriptcentral.com/jrheum> For additional information, contact the Managing Editor, The Journal of Rheumatology, E-mail: jrheum@jrheum.com

The Arthritis of Familial Mediterranean Fever

To The Editor:

We read with great interest the article by Lidar, *et al*¹ on arthritis as the sole episodic manifestation of familial Mediterranean fever (FMF). We would emphasize an additional feature that may be considered in the variables characterizing FMF related arthritis, namely the synovial fluid cell count. We recently reviewed the articular manifestations of 74 patients with FMF seen at the American University of Beirut Medical Center over an 18-year period², and reported the case of a young Lebanese woman who also presented with recurrent episodes of left knee and calf swelling as the sole manifestation of FMF³. The diagnosis was intriguing initially because the synovial fluid leukocyte count was suggestive of septic arthritis [172,000 cells/mm³, 94% polymorphonuclear (PMN)]; however, bacteriologic cultures were negative. FMF was suspected in view of a positive family history and genetic analysis for the mutations in the pyrin/marenostrin (MEFV) gene revealing a homozygote mutation at methionine-694-valine. The arthritis was controlled with prophylactic colchicine therapy.

In the earliest reviews on articular manifestations of FMF, Heller, *et al* reported that synovial fluid leukocyte counts ranged from 200/mm³ to 1,000,000/mm³ with high predominance of PMN⁴. This elevated leukocyte count usually suggests infection, and patients are often subjected to prolonged antibiotic therapy despite negative cultures⁵.

Our case supports the conclusion of Lidar, *et al* on the importance of considering FMF in the differential diagnosis of acute monoarthritis in young adults, keeping in mind that this arthritis may be associated with an elevated synovial fluid leukocyte count in regions with high incidence of FMF.

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REFERENCES

1. Lidar M, Kedem R, Mor A, Levartovsky D, Langevitz P, Livneh A. Arthritis as the sole episodic manifestation of familial Mediterranean fever. *J Rheumatol* 2005;32:859-62.
2. Uthman I, Hajj-Ali RA, Arayssi T, Masri AF, Nasr F. Arthritis in familial Mediterranean fever. *Rheumatol Int* 2001;20:145-8.
3. Uthman I, El-Sayyad J, El-Hajj I, Bizri A. Familial Mediterranean fever mimicking septic arthritis. *Rheumatol Int* 2005 Feb 8; Epub ahead of print.

4. Heller H, Gafni J, Michaeli D, et al. The arthritis of familial Mediterranean fever. *Arthritis Rheum* 1966;9:1-17.
5. Garcia-Gonzalez A, Weisman MH. The arthritis of familial Mediterranean fever. *Semin Arthritis Rheum* 1992;22:139-50.

Dr. Lidar and Dr. Livneh reply

To the Editor:

We agree with Dr. Uthman's comment concerning the very high leukocyte count that occasionally may be seen in the sterile synovial fluid drawn from an active joint of a patient with FMF. Others have reported a comparable observation, although only scantily^{1,2}, and in this regard Dr. Uthman's contribution is important. High white blood cell counts in sterile synovitis, however, are not specific for FMF and may occur in other monoarthritides, e.g., Behçet's disease, gout, reactive arthritis, etc^{3,4}. We were unable to evaluate this feature for sensitivity and specificity due to incomplete data in the files of the patients and controls. However, we believe that the criteria established are valid in spite of the absence of white blood cell counts in joint fluid. For instance, the arthritis in the patient reported by Dr. Uthman could have been assigned to FMF long before genetic and synovial cell analyses were obtained, because it complies with the criteria of FMF solo arthritis defined in our work⁵.

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REFERENCES

1. Gedalia A, Adar A, Gorodischer R. Familial Mediterranean fever in children. *J Rheumatol* 1992;19 Suppl 35:1-9.
2. Samuels J, Aksentjevich I, Torosyan Y, et al. Familial Mediterranean fever at the millennium. Clinical spectrum, ancient mutations, and a survey of 100 American referrals to the National Institutes of Health. *Medicine Baltimore* 1998;77:268-97.
3. Zizic TM, Stevens MB. The arthropathy of Behçet's disease. *Johns Hopkins Med J* 1975;136:243-50.
4. Atkinson MH, McLeod BD. Reactive arthritis associated with *Clostridium difficile* enteritis. *J Rheumatol* 1988;15:520-2.
5. Lidar M, Kedem R, Mor A, Levartovsky D, Langevitz P, Livneh A. Arthritis as the sole episodic manifestation of familial Mediterranean fever. *J Rheumatol* 2005;32:859-62.

Letters



Can Hand Assessments Designed for Persons with Scleroderma Be Valid for Persons with Rheumatoid Arthritis?

To the Editor:

Two recently developed assessments have been designed for persons with scleroderma. One, the UK Scleroderma Functional Score (UKFS) or Scleroderma Functional Assessment Questionnaire (Table 1), is a self-report of functional ability¹ and has been shown to be reliable and valid for persons with scleroderma¹⁻³. The other assessment is the Hand Mobility in Scleroderma Test (HAMIS)^{4,5}. The HAMIS is a performance test of joint motion (Table 1) and has also been shown to be reliable and valid for per-

sons with scleroderma. Since rheumatoid arthritis (RA) results in deformities of the hand, as does scleroderma, we wondered if the SFAQ and the HAMIS were valid assessments to measure hand function and joint motion in persons with RA. We compared SFAQ and HAMIS scores to other self-reports and performance based tests of hand function and range of motion in persons with RA.

A convenience sample of 40 subjects who had been diagnosed with RA according to the American College of Rheumatology criteria⁶ participated in this study. The mean age of subjects was 49.5 years (range 22–76 yrs), with a mean disease duration of 13.1 years (range 1–42 yrs). Subjects consisted of 34 women and 6 men. Thirty-eight subjects were right-handed, one was left handed, and one reported being ambidextrous.

Subjects were administered the following assessments: the UKFS¹, the HAMIS^{4,5}, the Duruöz Hand Index (DHI; also referred to as the Cochin Scale)⁷, the Health Assessment Questionnaire (HAQ)⁸, the Arthritis Hand Function Test (AHFT)⁹, and the Keital Functional Test (KFT)¹⁰. The concepts measured, question structure, and possible range of scores for each assessment are shown in Table 1. The UKFS, DHI, and HAQ are all self-reports, while the HAMIS, AHFT, and KFT are performance based tests.

Table 1 also shows the means and standard deviations for the 40 subjects on the UKFS, HAMIS, DHI, HAQ, AHFT, and KFT. Spearman rho correlation coefficients were calculated to examine the concurrent validity of the UKFS and HAMIS with the DHI, HAQ, and KFT. Table 2 shows good to excellent correlations of the UKFS with the DHI and the HAQ¹¹. Fair to moderate correlations were ascertained between UKFS and the HAMIS, AHFT, and KFT¹¹. For the HAMIS, only the correlation with the KFT was in the good to excellent range; correlations with the other tests were in the fair to moderate range.

One way to determine validity of instruments is to correlate scores with

variables known to have a converging relationship and with variables considered to have a moderate to minimal or divergent relationship. Thus, the UKFS would be expected to have higher relationships with the DHI and HAQ and less strong relationships with the measures of joint motion (HAMIS, KFT), hand strength, and dexterity (AHFT). Indeed, the strongest correlations for the UKFS were with the other self-reports, the DHI and HAQ, which have similar questions. However, the correlations with the sections on the AHFT are good, suggesting that perceptions of ability do reflect actual hand skills. The lower correlations between the UKFS scores and the HAMIS and KFT suggest a divergent relationship, and are not surprising as these 2 tests correlated highly with each other and assess joint motion rather than hand function. Thus, the findings support the convergent validity of the HAMIS. On the other hand, the HAMIS only moderately correlated with the 3 self-reports of function. The slightly stronger correlations between the HAMIS and scores from the AHFT suggest that range of motion is related to hand strength and dexterity. However, from the moderate correlations, it seems that measures of joint motion, strength, and dexterity are not synonymous with hand function. These findings are similar to other studies with persons with RA, which found that self-reports of hand function had convergent relationships with other self-reports of functional ability, but divergent relationships with variables such as pain, stiffness, tenderness and swelling, and joint motion^{7,12,13}. The divergent relationships suggest that measures of impairment such as joint motion, hand strength, and dexterity do not adequately address hand function, and impairment measures should be accompanied by assessments of hand function. Thus, the UKFS and HAMIS complement each other and are simple and easy to administer. They are valid for use with persons with RA and may be useful as outcome measures of hand function and joint motion.

Table 1. Description and descriptive statistics for the performance of 40 subjects on the UKFS, HAMIS, DHI, HAQ, AHFT, and KFT.

	Concept Measured	Question Structure	Possible Score Range	Sample Mean (SD)
UKFS ¹	9 upper extremity function items, 2 muscle strength items	Self-report: ability rated from 0 (able to perform in normal manner) to 3 (impossible to do). Scores for each item summed to obtain a total score	0–33	7.7 (5.9)
HAMIS ^{4,5}	9 items of joint motion: finger flexion, extension, abduction; wrist flexion, extension; thumb abduction, pincer grip; pronation, supination	Performance test: ability scored from 0 (no impairment) to 3 (cannot do). Scores for each item summed to obtain a total score	0–54	6.6 (8.3)
DHI ⁷	18 items in 5 categories: kitchen, dressing, hygiene, office, and other	Self-report: ability rated from 0 (without difficulty) to 5 (impossible). Scores for each item summed to obtain a total score	0–90	21.2 (17.8)
HAQ ⁸	20 items in 8 categories: dressing and grooming, arising, eating, walking, hygiene, reach, grip, outside activity	Self-report: ability rated from 0 (no difficulty) to 3 (unable to do). High scores for each category are summed and divided by the number of categories answered	0–3	1.14 (0.59)
AHFT items: Strength total (pounds) ⁹	3 items performed with each hand: grip strength, 2-point pinch strength, 3-point pinch strength	Performance test: score is the mean of 3 trials for the grip and 2 pinch items. Scores are summed	0–260	106.6 (46.5)
Applied Dexterity total (seconds) ⁹	5 items: fasten and unfasten 4 buttons, lace a shoe and tie a bow, pin and unpin 2 safety pins, pick up and manipulate coins, cut a piece of putty with a knife and fork	Performance test: score is the sum of times for the 5 items	0–400	153.0 (65.9)
Pegboard total (seconds) ⁹	1 item performed with each hand: 9-hole peg test	Performance test: score is the time to place and remove 9 pegs from a board with each hand. Score for each hand is summed	0–120	51.1 (17.7)
Total applied strength (milliliters) ⁹	2 items: lift a tray filled with cans of soup, pour water from a pitcher	Performance test: score is the number of cans on the tray (summed in ml) and total amount of water lifted in the pitcher	0–5800	5025.7 (1415.5)
KFT total ¹⁰	9 items of joint motion: finger flexion, wrist flexion and extension, forearm pronation and supination, elbow flexion	Performance test: depending on the item, ability rated from 0 (item performed fully or normally) to 2 (performed partially) or 3 (unable to do)	0–21	14.7 (10.1)

UKFS: United Kingdom Scleroderma Functional Score; HAMIS: Hand Mobility Test in Scleroderma; DHI: Duruoz Hand Index; HAQ: Health Assessment Questionnaire; AHFT: Arthritis Hand Function Test; KFT: Keital Functional Test.

Table 2. Spearman rho correlation coefficients for the SFAQ and HAMIS (n = 40).

Variable	SFAQ	HAMIS
Self-report measures		
UKFS	1.00	0.47**
DHI	0.85**	0.36*
HAQ	0.86**	0.44**
Performance based measures		
AHFT		
Strength total (pounds)	-0.65**	-0.65**
Pegboard total	0.63**	0.57**
Applied dexterity total	0.45**	0.55**
Applied strength total (milliliters)	0.53**	-0.36*
HAMIS Total	0.47**	1.00
KFT	0.37*	0.87*

* p < 0.05; ** p < 0.01.

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REFERENCES

- Silman A, Akesson A, Newman J, et al. Assessment of functional ability in patients with scleroderma: A proposed new disability assessment instrument. *J Rheumatol* 1998;25:79-83.
- Smyth AE, MacGregor AJ, Mukerjee D, Brough GM, Black CM, Denton CP. A cross-sectional comparison of three self-reported functional indices in scleroderma. *Rheumatology Oxford* 2003;42:732-8.
- Poole JL, Brower L. Validity of the Scleroderma Functional Assessment Questionnaire. *J Rheumatol* 2004;31:402-3.
- Sandqvist G, Eklund M. Validity of HAMIS: A test of hand mobility in scleroderma. *Arthritis Care Res* 2000;13:382-7.
- Sandqvist G, Eklund M. Hand mobility in scleroderma (HAMIS) test: The reliability of a novel hand function test. *Arthritis Care Res* 2000;13:369-74.
- Arnett FC, Edworthy SM, Bloch DA, et al. The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. *Arthritis Rheum* 1988;31:315-24.
- Duruoz M, Poiradeau S, Fermanian J, et al. Development and validation of a rheumatoid hand functional disability scale that assesses functional handicap. *J Rheumatol* 1996;23:1167-72.
- Fries J, Spitz P, Kraines G, Holman H. Measurement of patient outcome in arthritis. *Arthritis Rheum* 1980;23:137-45.
- Backman C, Mackie H, Harris J. Arthritis Hand Function Test: Development of a standardized assessment tool. *Occup Ther J Res* 1991;11:245-55.
- Eberl D, Rasching V, Rahlfs V, Schleyer I, Wolf R. Repeatability and objectivity of various measurements in rheumatoid arthritis: Comparative study. *Arthritis Rheum* 1976;19:1278-86.
- Portney L, Watkins M. Foundations of Clinical Research: Applications to Practice. 2nd ed. Englewood Cliffs: NJ: Prentice-Hall Health; 2000.
- Poiradeau S, Lefever-Colau MM, Fermanian J, Revel M. The ability of the Cochin Rheumatoid Hand Functional Scale to detect change during the course of disease. *Arthritis Care Res* 2000;13:296-303.
- O'Connor D, Kortman B, Smith A, Ahern M, Smith M, Krishnan J. Correlation between objective and subjective measures of hand function in patients with rheumatoid arthritis. *J Hand Ther* 1999;12:323-9.

Corrections

The Journal of Rheumatology Table of Contents, volume 32, number 8, August 2005. The title of the article at page 1426 should be, "Evaluation of the MDHAQ in Finnish Patients with RA." We regret the error.

The Journal of Rheumatology Table of Contents, volume 32, number 8, August 2005. The title of the article at page

1432 should be, "Further Development of a Physical Function Scale on a MDHAQ for Standard Care of Patients with Rheumatic Diseases." We regret the error.

Hudson M, Baron M, Rahme E, Pilote L. Ibuprofen may abrogate the benefits of aspirin when used for secondary prevention of myocardial infarction. *J Rheumatol* 2005; 32:1589-93. Table 2 should appear as follows. We regret the error.

Table 2. Hazard ratios (CI) of recurrent acute myocardial infarction (compared to nonexposed subjects).

	All NSAID	Diclofenac	Naproxen	Ibuprofen	Others
Ever exposed					
N	4079	1474	1239	372	1670
Crude	1.00 (0.83, 1.20)	0.90 (0.67, 1.21)	0.91 (0.67, 1.26)	0.92 (0.53, 1.59)	1.05 (0.81, 1.35)
Adjusted*	1.09 (0.90, 1.31)	0.99 (0.74, 1.33)	1.04 (0.75, 1.43)	1.01 (0.58, 1.76)	1.10 (0.85, 1.43)
Exposure ≥ 30 days					
N	2440	829	592	160	1046
Crude	0.84 (0.67, 1.06)	0.73 (0.49, 1.08)	0.87 (0.57, 1.35)	1.05 (0.50, 2.20)	0.79 (0.56, 1.12)
Adjusted*	0.93 (0.74, 1.16)	0.80 (0.54, 1.20)	0.99 (0.64, 1.53)	1.13 (0.54, 2.39)	0.87 (0.62, 1.23)
Exposure ≥ 60 days					
N	1547	517	336	90	633
Crude	0.93 (0.69, 1.25)	0.92 (0.56, 1.51)	0.72 (0.36, 1.44)	1.68 (0.70, 4.06)	0.80 (0.50, 1.30)
Adjusted*	1.01 (0.75, 1.36)	1.00 (0.61, 1.65)	0.78 (0.39, 1.57)	1.83 (0.76, 4.42)	0.87 (0.54, 1.42)

* Adjusted for age, sex, congestive heart failure, diabetes mellitus, chronic renal failure, cerebrovascular disease, cardiac procedures (angiography, percutaneous transluminal coronary angioplasty, coronary artery bypass grafting), time to time zero, acetaminophen use, university or rural hospital, hospital with an angiography suite, use of a beta-blocker within 90 days of discharge, and use of an ACE inhibitor within 90 days of discharge.

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