Original paper

Reumatologia 2025; 63, 3: 166–173
DOI: https://doi.org/10.5114/reum/201416

Insights into diagnosis and treatment of fibromyalgia among Moroccan rheumatologists: a cross sectional online survey

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Abstract

Introduction: This study outlines the diagnostic and therapeutic approaches – both pharmacological and non-pharmacological – used by Moroccan rheumatologists in managing fibromyalgia (FM). It also addresses other key aspects, such as assessing the psychosocial context of patients and referring them to other medical specialties.

Material and methods: A descriptive cross-sectional study was conducted using a survey designed to assess the management approach of Moroccan rheumatologists towards FM. The survey was carried out anonymously.

Results: Out of 275 rheumatologists, 140 responded to the questionnaire (with a total of approximately 450 rheumatologists in Morocco). Ninety-nine percent (n = 139) reported encountering FM patients in their practice. Diagnosis of FM was predominantly based on clinical assessment without a scoring system (n = 66; 47%), while 20.7% (n = 29) used the FIRST score. A substantial proportion (70%) of participants requested biological and imaging workups despite apparent FM, with 92% (n = 129) opting for an inflammatory workup. Regarding the treatment aspect, paracetamol was the first-line analgesic prescribed by 58% (n = 81), followed by tramadol (n = 43; 30.9%). Pregabalin was the most commonly prescribed first-line treatment (n = 37; 27.4%), with antidepressants being the second-line choice in 35.8% (n = 42). Non-pharmacological treatments such as physical therapy, therapeutic education, and psychotherapy were the most highly recommended. Nearly all rheumatologists (n = 131; 93.6%) emphasized the need for multidisciplinary management for FM patients, often referring them to psychiatrists either alone or in conjunction with other specialists.

Conclusions: Diagnosing and treating FM presents significant challenges. This survey sheds light on the diverse approaches adopted by Moroccan rheumatologists towards managing patients with FM, emphasizing the importance of multidisciplinary care in addressing the complex needs of these patients.

Key words: diagnosis, fibromyalgia, treatment, survey.

Introduction

Fibromyalgia (FM), a condition characterized by chronic widespread musculoskeletal pain, is often associated with a range of symptoms that affect the quality of life of sufferers [1, 2]. Its prevalence ranges from 0.4% (Greece) to 8.8% (Turkey), with a mean estimated global prevalence of 2.7% and a notable female predominance, reflected in a female to male ratio of 3 : 1 [3, 4]. In Morocco, we have very sparse data on FM, which appears to be extremely common. This gap highlights the importance of conducting large-scale studies to better understand the epidemiology of FM in the Moroccan context. The criteria for the classification of FM were originally established by the American College of Rheumatology (ACR) in 1990 [5]. Over the past two decades, several authors, including the primary author of the 1990 criteria, have made subsequent observations. The aim of these observations was to identify a new strategy for classifying patients with FM [6]. In May 2010, proposals were made for new classification criteria that would include not only

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Submitted: 15.10.2024; **Accepted:** 13.02.2025

pain-related factors but also the wide range of symptoms experienced by people with FM [7]. The ACR criteria make it possible to identify FM patients among people suffering from chronic musculoskeletal pain of other origins [8]. In parallel, a screening tool for patients with diffuse pain, known as the Fibromyalgia Rapid Screening Tool (FiRST), has been developed [9]. The multifaceted nature of FM poses a significant diagnostic and therapeutic dilemma for clinicians in a variety of specialties. Predominantly characterized by widespread pain, it also includes other clinical manifestations such as fatigue, sleep disturbance and cognitive impairment, which pose challenges in its assessment and management. An issue that often concerns rheumatologists in Morocco and around the world is the complexity of managing patients with FM. This condition is challenging because its symptoms and signs can mimic those of other musculoskeletal disorders, leading patients to consult multiple specialists before reaching a rheumatologist. As a result, patients with FM undergo a lengthy journey in search of a diagnosis, often experiencing uncertainty and frustration with treatment outcomes, which affects both patient and physician satisfaction. Currently, there is a lack of data regarding the perspectives of Moroccan rheumatologists on the diagnosis and management of FM. This survey aims to provide objective insights into this topic. Our aim was to describe the tools used by Moroccan rheumatologists to diagnose FM and to expose how they assess it and how they manage it, to compare their attitudes with those cited in the literature.

Material and methods

The study used a descriptive cross-sectional design. A survey was designed with four domains:

- general considerations and physician demographics (age, sex, years of experience, practice area);
- diagnostic aspects of FM;
- therapeutic options employed, including pharmacological and non-pharmacological treatments, as well as alternative therapies;
- perspectives on a multidisciplinary approach to FM management and the process of referral to other specialists.

The survey was self-administered and anonymous, distributed via a Google Form within the Moroccan rheumatologists' WhatsApp group comprising 275 members.

Statistical analysis

Data collected were stored in a database and analyzed using Microsoft Excel. Descriptive analysis was performed, using frequencies and percentages for qualitative variables, while measures of central tendency were used for quantitative variables.

Bioethical standards

The consent of the bioethics committee was not required.

Results

In Morocco, there are approximately 450 rheumatologists in total. Of the 275 surveyed, 140 participated in the study. The mean age was 45 ±13 years, with a female predominance of 81% (n = 114). The median duration of experience in rheumatology practice was 14 years [1–45]. Regarding their practice settings, 34.3% (n = 48) worked in university hospitals, 22.1% (n = 31) in the public sector, and 43.6% (n = 61) in the private sector. Ninety-nine percent (n = 139) of rheumatologists reported encountering patients with FM in their daily practice. Among them 94.5% (n = 132) reported seeing at least five FM patients, mainly in the private sector. In diagnosing FM, clinical assessment by practitioners was most commonly used in the private sector, accounting for 63.93% (n = 39) of cases. In contrast, the FIRST score was notably used in the academic sector, applied in 50% of cases (n = 24). Additionally, the ACR criteria were used in 19.35% (n = 6) of cases within the public sector. Regarding associated factors, a substantial number of rheumatologists actively screened for symptoms typically associated with FM, as shown in Table I. Furthermore, 70% of the surveyed rheumatologists (n = 99) regularly requested biological and/or imaging tests, and 35% conducted oncology screening, as detailed in Table I. In terms of analgesic therapy, most rheumatologists (57.9%, n = 81) prescribed paracetamol at first-line treatment. Tramadol was recommended by 30.9% (n = 43) of physicians as a second-line analgesic. Additional prescribed medications are listed in Table II. For the treatment of FM, pregabalin was the most frequently prescribed as first-line therapy (n = 37, 27.4%), while antidepressants, without further specification, were the second-line choice in 35.8% of cases (n = 42). Additional details are provided in Table II. The effectiveness of these treatments was primarily evaluated using the Visual Analogue Scale (VAS) for pain, fatigue, and sleep quality. In terms of safety assessment, 64.3% (n = 90) of rheumatologists evaluated the safety of these drugs only clinically, while 35% (n = 49) assessed safety both clinically and biologically. Non-pharmacological approaches recommended for FM patients primarily included physiotherapy, therapeutic education, and psychotherapy. Among the suggested physical activities, regular walking, gym workouts, and aquagym were the most recommended (Table III). Rheumatologists commonly advise patients to adopt a healthy lifestyle, emphasizing the importance of maintaining regular, appropriate physical activity and following a balanced

Table I. Disorders assessed in FM patients, and imaging/biological tests requested by rheumatologists

Disorders and tests	Rheumatologists who assessed this disorder [*n* (%)]
Disorder	
Sleep disorder	124 (88.6)
Anxiety disorder	135 (96.4)
Fatigue	137 (97.9)
Functional intestinal disorder and headaches	110 (78.6)
Traumatic event (sexual assault, grief...) or conflict situations	108 (77.1)
Test	
Biological and/or imaging tests	99 (70.7)
Inflammatory workup	129 (92.1)
Autoimmunity test	93 (66.4)
Phosphocalcic test	104 (74.3)
Muscle enzyme test	69 (49.3)
Electromyography	34 (24.3)
Oncology screening	49 (35.0)

diet as a key recommendation. When asked whether FM patients independently used other non-pharmacological methods to relieve their symptoms, 87.1% (n = 122) of rheumatologists answered in the affirmative. Among these methods, spirituality without specification was the most commonly reported at 75.4% (n = 101). The remaining respondents reported various other methods (Table III). Ultimately, 93.6% of the rheumatologists surveyed believed that patients with FM would benefit from a multidisciplinary approach. Almost all of them indicated their intent to refer these patients either solely to a psychiatrist or in conjunction with other specialties as part of their management plan (Table IV).

Discussion

Our study suggests a potentially high prevalence of FM in our context, given the substantial number of FM patients encountered in daily practice of our rheumatologists. To date, no study offers a clear figure for FM prevalence whether in the general population or in specific populations such as patients treating for rheumatic diseases, highlighting the necessity for future research [10–12]. Although it is a predominantly female pathology, the male form exists and has specific particularities [13]. Moreover, numerous studies have highlighted the challenges faced by general practitioners and specialists, including rheumatologists, in diagnosing,

Table II. Analgesics and treatments prescribed by rheumatologists in FM patients

Treatment	Prescribing rheumatologists [*n* (%)]
Analgesics	
First-line	
Paracetamol	81 (57.9)
Codeine + paracetamol	22 (15.7)
Tramadol	11 (7.9)
NSAIDs	8 (5.7)
Codeine	4 (2.8)
Pregabalin	1 (0.7)
Antidepressant	2 (1.4)
Second-line	
Tramadol	43 (30.9)
Codeine + paracetamol	37 (26.6)
NSAIDs	18 (12.9)
Codeine	11 (7.9)
Pregabalin	11 (7.9)
Paracetamol + tramadol	5 (3.6)
Morphine	3 (2.1)
Muscle relaxant	3 (2.1)
Antidepressant	2 (1.4)
Treatment of FM	
First-line	
Pregabalin	37 (27.4)
Antidepressant	32 (23.7)
Amitriptyline	26 (19.3)
Duloxetine	13 (9.6)
SSRIS	9 (6.7)
Clomipramine hydrochloride	7 (5.2)
NSAIDs	3 (2.2)
Anxiolytics	2 (1.5)
Second-line	
Antidepressant	42 (35.8)
Pregabalin	35 (27.3)
Amitriptyline	21 (16.4)
Duloxetine	14 (10.9)
SSRIs	8 (6.3)
Clomipramine hydrochloride	5 (3.9)
Anxiolytics	2 (1.6)

NSAIDs – nonsteroidal anti-inflammatory drugs, SSRIs – selective serotonin reuptake inhibitors.

Table III. Non-pharmacological methods recommended by rheumatologists and other methods employed by patients to relieve their symptoms

Non-pharmacological methods	Rheumatologists who recommended it [*n* (%)]
Physiotherapy, therapeutic education, psychotherapy	28 (20)
Physiotherapy, psychotherapy	15 (10.7)
Physiotherapy, therapeutic education	6 (4.3)
Therapeutic education	6 (4.3)
Psychotherapy	6 (4.3)
Physiotherapy	5 (3.6)
Physiotherapy, therapeutic education, hydrotherapy, psychotherapy	5 (3.6)
Physiotherapy, therapeutic education, psychotherapy, acupuncture	4 (2.9)
Therapeutic education, psychotherapy	5 (3.6)
Physiotherapy, therapeutic education, acupuncture	2 (1.7)
Therapeutic education, psychotherapy, energy therapies	2 (1.7)
Physical activities	
Regular walk, gym, aquagym	45 (32.1)
Regular walk, aquagym	30 (21.4)
Regular walk, gym	23 (16.4)
Regular walk	18 (12.9)
Water aerobics	7 (5.0)
Gym	3 (2.1)
Regular walk, water aerobics, yoga	2 (1.4)
Other non-pharmacological tools employed by patients	**Rheumatologists who have assessed it [*n* (%)]**
All methods	122 (87.1)
Spirituality	101 (75.4)
Leisure activities	17 (12.7)
Meditation	7 (5.2)
Cupping	3 (2.2)
Other	6 (5.4)

managing, and treating FM [14–17]. The main concern is the delay in establishing the diagnosis, which often leads to considerable uncertainty about the etiology of the disease and delays effective treatment and outcomes once treatment is started [18, 19].

This study represents the first of its kind to describe the concepts and attitudes of rheumatologists in Morocco concerning the diagnostic and therapeutic approaches of FM patients. The primary point highlighted was that the diagnosis of FM can be made clinically without using any score, followed by the use of the FiRST score and the ACR criteria. There was variability among different sectors, with a preference for using the FiRST score in academic sectors, whereas clinical assessment was favored in private practice. In our study, the ACR criteria were used in 24.9% of cases, either independently or in conjunction with clinical assessment and/or the FiRST questionnaire. In European countries, the usage rate was slightly higher at 35.7%, while in Latin America, it was 61.7% [20]. In Saudi Arabia, the rate was reported to be 31.1% [21]. There is a wide range of questionnaires specifically designed for people with FM that have good and/or excellent basic psychometric properties [22]. The FiRST remains the most suitable for daily practice. It is quick to calculate and allows the assessment of both pain and associated disorders with a sensitivity of 90.5% and a specificity of 85.7% [9]. Other scores have been developed for diagnosing FM, such as the Fibromyalgia Assessment Screening Tool (FAST4). This practical cumulative index

Table IV. Multidisciplinary approach and other specialities that rheumatologists believe should manage FM

Multidisciplinary approach	Rheumatologists [*n* (%)]
Yes for a multidisciplinary approach	131 (93.6)
Psychiatry	29 (20.9)
Physical and rehabilitation medicine, psychiatry, hypnotherapist	13 (9.4)
Physical medicine and rehabilitation, psychiatry	13 (9.4)
Psychiatry, hypnotherapist	9 (6.5)
Physical medicine and rehabilitation, psychiatry, algologist, hypnotherapist	11 (7.9)
Neurologist, physical and rehabilitation medicine, psychiatry	8 (5.8)
Psychiatry, algologist	7 (5)
Neurologist, physical and rehabilitation medicine, psychiatry, hypnotherapist	4 (3.4)
Physical and rehabilitation medicine, psychiatry, algologist	4 (3.4)
Physical medicine and rehabilitation	3 (2.5)
Gastroenterologist, physical and rehabilitation, medicine, psychiatry	3 (2.5)

utilizes the Multidimensional Health Assessment Questionnaire to screen for FM in patients with rheumatic diseases. It includes a painful joint count and VAS for both pain and fatigue. A FAST4 score of ≥ 3 correctly classified 91.7% of patients according to the 2011 FM criteria, with a sensitivity of 70.4% and a specificity of 97.1% [23]. As demonstrated in a recently published study, the FAST4 index identified FM patients, as defined by the FiRST score, with a sensitivity of 78.6% and a specificity of 87.1% [24]. Thus, in addition to the FiRST score, the FAST4 could be a valuable tool for diagnosing FM associated with rheumatic diseases.

Fibromyalgia is not only responsible for diffuse pain but also for other disorders [25–27]. We found that the majority of our rheumatologists not only screen for other symptoms associated with pain, such as fatigue, sleep disorders and anxiety, but also inquire about the patient's contextual background, highlighting a significant interest in the psychosocial aspects of care for these patients [28].

To investigate FM, they often request biological or imaging tests even when FM symptoms are evident, with 35% opting to conduct oncology screening. This underscores the importance of ruling out other potential causes of generalized pain, even when rheumatologists have a strong clinical suspicion of FM. This condition could lead us to discover an autoimmune disease such as Sjögren's syndrome or a panel of myositis or autoimmune thyroiditis or other conditions [29–31]. Indeed, Dreyer et al. found in the Danish Cancer Register an increased overall risk of cancer among female patients referred to the hospital for suspected FM. This includes a higher risk for breast cancer (standardized incidence ratio [SIR] 4.8, 95% confidence interval [CI]: 1.6–11.3), lymphatic and hematological cancers (SIR 10.6, 95% CI: 1.2–38.2), and cancers of the respiratory system [32, 33]. This underscores the need to focus on risk factors associated with malignancies during the follow-up of FM patients or when FM is suspected.

Regarding the treatment aspect, among first-line analgesic treatments prescribed, we observed a high rate of paracetamol prescription, followed by tramadol. These findings contrast with those of other studies that have shown significant use of opioids, particularly in a US study, and nonsteroidal anti-inflammatory drugs in German FM patients [34, 35]. The 2017 European Alliance of Associations for Rheumatology (EULAR) recommendations explicitly advise against the use of opioids for pharmacological treatment and, in general, recommend education and non-pharmacological therapies as the first-line approach [36]. This divergence in therapeutic practices may reflect regional variations in FM management, as well as differences in clinical approaches and physician preferences influenced by medical and cultural contexts. In our experience, rheumatologists tend to prescribe more chemical treatments than non-pharmacological therapies. This trend may be influenced by cultural beliefs and the perception that medication is essential to alleviate patient discomfort. Many clinical trials have focused on demonstrating the effectiveness of various treatments for FM, including analgesics and psychotropic medications, with varying levels of evidence. Treatment guidelines for FM recommend four drug classes: anti-epileptic drugs, tricyclic anti-depressants, selective serotonin reuptake inhibitors, and serotonin-norepinephrine reuptake inhibitors. However, it is important to note that the three principal drugs approved by the FDA for FM are pregabalin, duloxetine, and milnacipran [37]. None of the medications currently available is fully effective against the full range of FM symptoms. Tricyclic antidepressants, particularly amitriptyline, have been shown to reduce fatigue as well as to improve sleep and quality of life [38]. In our department, we implement what we call the "clomipramine protocol", which enables us to evaluate its efficacy. Serotonin-noradrenaline reuptake inhibitors such as duloxetine are effective for pain and depression symptoms, while milnacipran has also been effective in reducing fatigue [39–41]. Selective serotonin reuptake inhibitors can improve, in a more limited way, pain and depression [42]. Regarding gabapentinoids, pregabalin had been shown to improve pain and sleep disorders, but it has no significant effect on fatigue or depression [43–45]. Combination therapy is an option that is still in need of further investigation in clinical trials. Our study findings also highlight the importance of recommending non-pharmacological interventions for these patients, particularly physical therapy, therapeutic education, and psychotherapy. Recent studies have highlighted the therapeutic benefit of physiotherapy, physical exercise and aerobic activity [46–48]. However, due to the lack of consensus on the protocol, the frequency and the intensity, these tools are therapy to be advised but not prescribed. In addition, therapeutic education of the FM patient brings additional benefit [49]. Adopting a healthier lifestyle is also advised. This approach aligns with the 2017 EULAR recommendations, which emphasize the importance of non-pharmacological interventions in the management of FM, particularly aerobic and strengthening exercises [36]. Finally, the significance attributed by rheumatologists to the interdisciplinary management of FM is evident. In fact, the majority of physicians expressed the belief that patients with FM should be managed in conjunction with a psychiatrist. This encourages us, as rheumatologists, to involve our colleagues from other specialties in understanding

this condition and its diagnostic tools, applying them in daily practice across various settings and adopting a multidisciplinary approach to its management. We also believe that defining and unifying the most effective approach may ultimately be the key to improving the quality of life of these patients and reducing their nomadism. Our study had limitations. It was a survey carried out online, which did not include all Moroccan rheumatologists, and it was designed in such a way that the questions would have multiple-choice answers. However, it was able to give a global idea of the practices and attitudes of rheumatologists in our context.

Conclusions

This survey provides us with objective data on the aspects of the management of FM at a diagnostic and therapeutic level in our Moroccan context and shows the diversity of attitudes of rheumatologists, who remain aware of the complexity of this disease. It is clear that the diagnosis remains clinical, based on scores that can facilitate the identification of FM patients, such as the FiRST score. Pain is not the only concern of both the clinician and the patient, but associated disorders also need to be assessed. Paraclinical investigations are important in the search for a secondary cause. Again, rheumatologists remain vigilant to the possibility that the etiology may be neoplastic. There is no consensus about treatment. Pregabalin or antidepressants are most commonly prescribed in combination with analgesics. However, non-pharmacological tools are taking their place. Such data could provide constructive feedback for future studies on this topic, with the aim of improving the quality of care for FM patients, in particular by establishing consensual therapeutic protocols.

Disclosures

Conflict of interest: The authors declare no conflict of interest.
Funding: No external funding.
Ethics approval: Not appicable.
Data availability: The data that support the findings of this study are available on request from the corresponding author (El B. I.).

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