

Original Article

Classification of fibromyalgia. A systematic review of the literature

Rafael Berenguer,^{a,*} Manuel Ramos-Casals,^b Antoni Siso,^c and Javier Rivera^d

^a Unit of Fibromyalgia, Hospital 9 d'Octubre, Valencia, Spain

^b Department of Autoimmune Disease, IDIBAPS, Hospital Clínic, Barcelona, Spain

^c CAP Les Corts, GESCLINIC, Hospital Clínic, Barcelona, Spain.

^d Department of Rheumatology, Instituto Provincial de Reumatología, Madrid, Spain

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ABSTRACT

Objective: To review the scientific literature concerning the classification of fibromyalgia (FM), including previous studies focusing on the nosologic evaluation of FM, with the aim of proposing a classificatory hypothesis based on the current scientific evidence.

Methods: Systematic review using a baseline MEDLINE search. Search terms included "fibromyalgia" and "classification." Additional articles were identified through a comprehensive manual search of the references of retrieved articles.

Results: This systematic review has identified, on the one hand, several classificatory proposals based on psychopathological aspects, and, on the other hand, the key role of associated diseases. Based on the scientific evidence currently available, the following FM subsets were defined: patients with no associated processes (type I FM), patients with associated rheumatic/autoimmune chronic diseases (type II FM), patients with severe psychiatric disorders (type III FM) and patients with simulated FM (type IV FM).

Conclusions: Few studies have specifically analyzed the classification of FM into subgroups with a more homogeneous clinical expression. Correct classification of patients with FM requires the integration of two key concepts (psychopathological evaluation and coexistence of comorbid processes), with an individual diagnostic evaluation by a multidisciplinary team.

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Clasificación de la fibromialgia. Revisión sistemática de la literatura

RESUMEN

Objetivo: Recopilar la información existente sobre la clasificación de la fibromialgia (FM), analizar los antecedentes relevantes en relación con una subdivisión nosológica y proponer una hipótesis clasificatoria fundamentada en la evidencia científica existente en la actualidad.

Metodología: Revisión sistemática de la literatura mediante búsqueda en la página web PubMed. Los términos de búsqueda en MEDLINE fueron «fibromyalgia» y «classification». Se realizó una búsqueda manual adicional entre las referencias de los artículos seleccionados.

Resultados: La revisión sistemática de la literatura ha permitido identificar, por una parte, la existencia de varias propuestas clasificatorias esencialmente basadas en criterios psicopatológicos y, por otra parte, la importancia de evaluar las enfermedades relacionadas con la FM. Según la evidencia analizada, se han identificado los siguientes subgrupos clasificatorios en el paciente que cumple los criterios vigentes de 1990: pacientes sin ninguna enfermedad concomitante (FM tipo I), pacientes con enfermedades crónicas reumáticas y autoinmunitarias (FM tipo II), pacientes con grave alteración en la esfera psicopatológica (FM tipo III) y pacientes simuladores (FM tipo IV).

Conclusiones: Son pocos los estudios que analizan de forma específica cómo identificar subgrupos de pacientes con FM con una expresión clínica más homogénea. El análisis ha permitido identificar que los principales aspectos a evaluar en la clasificación del paciente con FM son el perfil psicopatológico y la coexistencia de otros procesos. Una adecuada clasificación del paciente con FM sólo puede realizarse mediante una evaluación diagnóstica individualizada por parte de un equipo multidisciplinario.

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* Corresponding author.

E-mail address: rberenguer@gmail.com (R. Belenguer).

Introduction

Fibromyalgia (FM is a disease which frequently causes chronic pain in the population. It is characterized by persistent and chronic, generalized pain which in patients is localized, overall, in the locomotor system and which represents an exaggerated hypersensitivity in multiple, predefined points (*tender points*), without demonstrable organic alterations.¹ It is typically related with a greater symptom variety among which there is persistent fatigue, sleep disturbances, rigidity and anxious-depressive symptoms.

FM was recognized as a disease by the World Health Organization (WHO) in 1992, and typified in the International classification of diseases (ICD-10)² with the code M79.0. However, because of the absence of specific and evident organic affection, the lack of a confirmatory diagnostic test, its frequent relationship with psychopathological problems and the great impact it has on health resources, FM easily generates conflicting clinical situations and polemic scientific discussions.³ The great heterogeneity of FM clinical expression, added to the lack of standardized instruments to order and classify the different symptoms and clinical presentations contributes even more to the hopelessness and, occasionally, impotence that appears when attending to these patients.

It is unnecessary to point out the importance of having a classification of FM based on its relationship to other diseases (gnosologic classification), something that is evermore used in the area of systemic autoimmune and rheumatic diseases.⁴⁻⁶ This type of classification or subdivision has shown to be useful in clinical practice when dealing with patients that present very heterogeneous diseases regarding their clinical expression, because it allows the identification of more homogeneous subgroups of patients and, therefore, identifies candidates to receive more individualized diagnostic and therapeutic guidelines.

The objective of the present study is to analyze the existing information regarding the classification of FM through the systematic review of the literature to, as a next step, analyze the relevant history in relation to a gnosologic subdivision, evaluate previous classificatory attempts and, finally, propose a classification hypothesis based on the currently existing scientific evidence.

Methodology

A search of the MEDLINE database was performed through the PubMed webpage (<http://www.ncbi.nlm.nih.gov>) of articles included between January 1, 1955 and March 31, 2008. The search strategy was based on a combination of the terms "fibromyalgia" and "classification." No search filter was established with respect to the type of study, language of publication or certain patient subgroup analysis.

Of the selected articles through the search strategy described above, the content of the abstract was analyzed according to the following selection criteria:

- The article must study or analyze patients with FM.
- Its content should be related, at least potentially, with the classification or subdivision of FM.
- No congress abstract information was evaluated.

After this approach, the selected full text articles were analyzed. The decision on their inclusion as relevant to the study was based on the following premises:

- Patients included in the studies should comply with the classification criteria proposed by the American College of Rheumatology in 1990.⁷

- Articles should contain information on the gnosologic classification of FM (description, differentiation and classification of patients according to concomitant diseases).
- In case of duplicate information, the most recent article was selected.
- Studies on prognostic classification or severity of FM, influence in quality of life or classifications based on therapeutic interventions were not included in the analysis.

The manual review of the included references allowed the identification of additional articles of interest, for which the same relevance criteria exposed before were applied.

After summarizing the information extracted of the articles finally selected, results were grouped according to the following points:

- Critical analysis of the 1990 criteria.
- Previous classifications with a predominantly gnosologic basis.
- Classification proposal.

Results

The bibliographic search identified a total of 279 publications, of which 61 were selected as relevant. After the detailed analysis of each one of these studies, 22 were excluded. Manual review identified 40 additional studies, with the final inclusion of 79 articles in the analysis (Figure).

Critical analysis of the 1990 criteria

In order to differentiate FM from other symptoms with similar manifestations, the American College of Rheumatology (ACR) led a 1990 multicentric study in order to unify and homogenize classification criteria.⁷ These criteria insured the validity in the diagnosis of FM independently of whether there were other concomitant diseases or not, with a sensitivity of 88% and a specificity of 81%. The two chosen criteria were the history of chronic diffuse generalized pain and the unleashing of pain after digital pressure is applied in at least 11 of 18 predefined trigger points (both criteria centered exclusively on pain). The systematic review has shown a growing critical vision on the specificity of these two criteria when identifying patient subgroups with homogeneous characteristics in the clinical practice.

The first classification criteria is similar to the one employed to identify patients with chronic widespread pain. The difficulty in distinguishing the states of chronic pain according to their cause have recently been evaluated by Provenzano et al⁸ who, although some differences are indicated in the expression of pain in patients with different diseases, concludes on how difficult it is to discriminate the type of pain in relation to the underlying diseases. In that way, Coster et al⁹ detected a prevalence of chronic, generalized pain in 4.5% of the general population, of which more than half (2.5%) presented, in addition, the ACR FM criteria. Therefore, differentiating if a patient has chronic widespread pain, (an entity as prevalent as it is heterogeneous and discussed) or FM is based only in the additional compliance of the second criteria, pain upon pressure on trigger points.

With respect to the second criteria, the systematic review has shown polemic on the fact that the trigger points are the only instrument that allows for the differentiation of the patient with chronic widespread pain (of any cause) from the patient with FM.¹⁰ The main studies show a great variety of aspects that seed doubt on how solid the use of trigger points as a solid and objective criteria for the diagnosis of FM is, which includes their great variation over time,¹¹ the few differences seen depending on whether trigger points, groups of points or areas are analyzed,¹² the heterogeneity in the different forms for their evaluation and its results,^{13,14} the modest association found between pain in a body segment and a

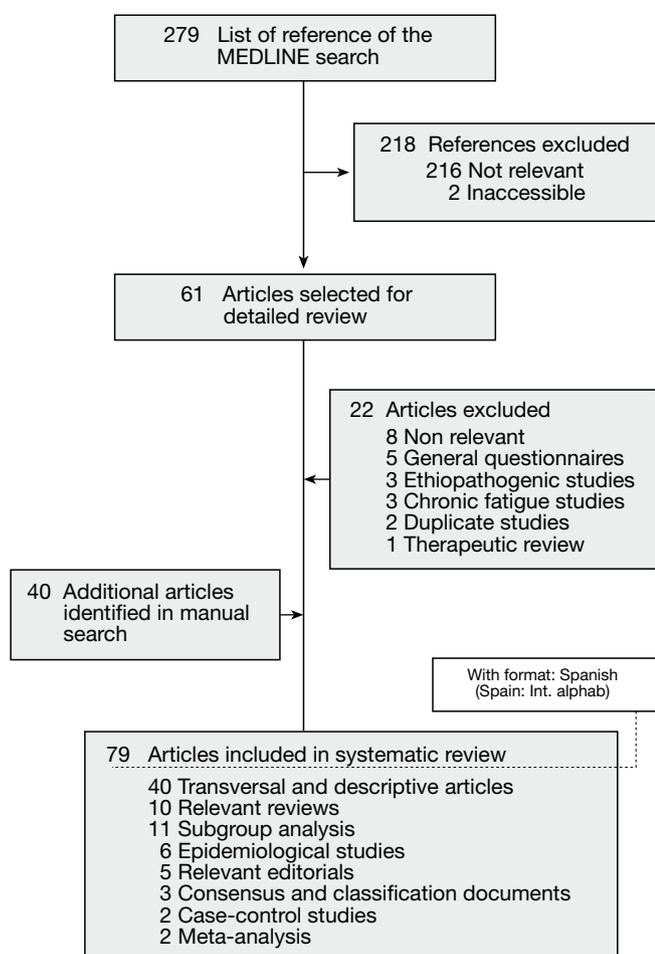


Figure 1. Flux diagram of the systematic review: acquisition of evidence.

specific, localized trigger point localized to such a segment,¹⁵ and even lack of consensus in the definition of “negative” or control points.^{16,17} Another argument employed by some authors is that the points behave as a continuum in a way that allows for more pain to generate more points and, in addition, allows for more stress to generate more trigger points.^{18,19} Therefore, establishing a cut point at 11, which theoretically would distinguish a patient with FM from one who does not have the disease, is completely artificial.

According to the studies analyzed, the problems that these two criteria generate in the “real” patient, who frequently has a large amount of manifestations, processes and/or different concomitant diseases, are patent. This fact leads to a great heterogeneity in the clinical presentation of the patient who complies with the FM classification criteria and underlines the importance of proposing a gnosiologic classification based on splitting the patients with the intention of performing a person-centered therapeutic approach.^{20,21}

Previous classifications with a predominantly gnosiologic basis

In spite of the fact that in 1958 Rosenberg²² used the term *classification* in a review of what then was known as “fibrositis,” it wasn’t until 1989 when Vitali et al²³ commented on the need to have criteria to identify FM, which were published one year later.⁷ The systematic review identified 5 precious classification proposals based predominantly on a gnosiologic foundation:

- In 1996 the first proposal is made on the classification or subdivision of FM.^{24,25} After pointing out the enormous

heterogeneity in the type of patients identified by the ACR classification criteria of 1990, a group of the department of Psychiatry of the University of Pittsburg, led by Turk, empirically defined the existence of 3 subclassification groups with a differential psychosocial profile, evaluated according to the responses obtained in the Minnesota Multiphasic Personality Inventory (MMPI) questionnaire, a concept of a psychosocial taxonomic approach that the same group had proposed as an hypothesis in 1989.²⁶

- In 2001, Hurtig et al²⁷ performed a semiexperimental clinical trial in 29 patients with FM using a quantitative test that measured pain produced by thermal stimuli on the back of the hand and that led to the definition of 2 subgroups with distinct behaviour produced by the changes in temperature. This classification has been employed by Raak et al²⁸ in the analysis of a small series of patients with FM and its implications in the nursing care of these patient.
- In 2003, Giesecke et al²⁹ proposed, for the first time, to add the psychopathological profile evaluation (proposed by Turk) and the personalized analysis of the response to pain (tenderness and pain perception). The results identified 3 subgroups of different patients with a very well defined psychopathological profile, a profile that was related in a very practical manner with the way in which the patients in each one of the subgroups responded to pain.
- In 2006, Blasco et al³⁰ performed an ample study on the psychopathological profile of patients with FM, by applying the State-Trait Anxiety Inventory Estado/Rasgo (STAI-E/R), Beck Depression Inventory (BDI) and MMPI to a group of 75 patients. The authors proposed a formula they called the “index of fibromyalgia psychopathological profile” (Ippc), derived from the MMPI-2, which was capable of distinguishing between two types of psychopathological profiles in the patient with FM (profiles A and B), and that from a therapeutic standpoint can be used as an indicator of psychopathological severity. The usefulness of this FM patient survey index, according to the degree of underlying psychopathology, can be important when deciding what type of psychotherapeutic intervention is adequate for each patient.
- In 2007, Muller et al³¹ proposed an empirical form of classification of FM based mainly on the psychopathological profile of the patient, which included group 1 (no psychiatric disease), group 2 (FM and depression), group 3 (depression and FM) and group 4 (FM due to somatization). It is difficult to differentiate groups 2 and 3 because the authors do not take into account the coexistence of rheumatic and autoimmune diseases, although the authors propose, for the first time, a different therapeutic approach to each group.

The analysis of the characteristics of these classifications has allowed us to identify the following key aspects:

- The four main proposals^{25,29,30} are based on the psychopathological profile of the patient.
- All subdivisions are empirical.
- None of the classifications incorporates the relationship with FM with the coexistence or not of concomitant illness.
- These classifications have not been validated in large series of FM patients.

Proposal for a gnosiologic classification

The systematic review has proven the importance of considering concomitant disease when classifying subgroups of patients with FM,³²⁻³⁴ a concept eradicated by the article that proposed the 1990 criteria,⁷ because upon finding no significant differences in the

application of these criteria between primary FM and that related to other processes, the conclusion of the study was to abandon the use of the subclassification system. After the detailed analysis of the existing information characteristics, the systematic review has allowed us to identify diverse groups of patients with FM, some which have been well defined in prior classifications. On this basis and following an empirical classifying scheme, we have summarized the current knowledge in a classification hypothesis that includes both the psychopathological profile and the coexistence of the different processes and clinical situations that the patient with FM can present (Table 1).

- Idiopathic fibromyalgia (type I). This subgroup, defined by Müller et al³¹ as “FM with extreme sensitivity to pain not associated with psychiatric processes,” was identified by Giesecke et al²⁹ in 2003 thanks to an exhaustive psychopathological analysis of 97 patients with FM centered on the evaluation of three aspects: mood (evaluated through the CES-D and STPI questionnaires), cognition (evaluated through some subscales of the CSQ) and tenderness (analyzed using a pain meter and the MRS methodology). The authors identified a small group of patients (16%, all women) who presented a differential psychopathological profile characterized by normal values in their mood, very low catastrophizing values and an elevated degree of control over perceived pain in the CSQ, in spite of presenting elevated tenderness upon induced pain.
- Fibromyalgia related to chronic diseases (type II). In spite of the fact that fibromyalgia has been described in patients with chronic disease of almost any cause (degenerative, autoimmune, endocrine, infectious, or neoplastic), there is no doubt that most of the cases are diagnosed in patients with chronic diseases that are accompanied by dysfunction and, overall, daily pain (to a certain degree). Most of these diseases can be included within the area of rheumatology, and includes both systemic diseases (FM type IIa) and local processes (FM type IIb). Systemic diseases most frequently related to FM are Sjögren’s syndrome and rheumatoid arthritis (Table 2).³⁵⁻⁵⁹ In order to adequately classify patients, the first step is for the corresponding specialist to insure that the current classification criteria are correctly applied, and then perform an adequate psychopathological evaluation as proposed by Blasco et al.³⁰ On the other hand, patients with local or regional bone and muscle chronic processes can also develop FM. The term used recently to denominate this group of processes is “painful regional syndrome,”⁶⁰ and is related to the degeneration of bone and muscle structures in a determined localization.
- Fibromyalgia in patients with psychopathologic diseases (type III). Merskey⁶¹ in 1989 observed patients with FM and a severe psychopathological alteration, something confirmed by Giesecke et al²⁹ in 2003, upon identifying a subgroup of patients with altered values in the psychosocial domain study (very elevated scores in the analysis of depressive symptoms measured using the CES-D questionnaire and anxiety in the STPI questionnaire)

and a significant dissociation in the study of cognition through the CSQ (elevated scores in catastrophizing and low scores regarding control of pain). This subgroup of patients is crucial to the psychiatrist’s contribution, who must carry out a detailed evaluation of the psychopathological and social aspects influencing the health status of the patient through self-applied questionnaires such as the Symptom Checklist (SCL-90R), the Illness Behavior Questionnaire (IQB), the Chronic Illness Problem Inventory (CIPI), the Minnesota Multiphasic Personality Inventory (MMPI) or the Beck Depression Inventory (BDI).⁶²⁻⁶⁴ According to Blasco et al,³⁰ patients with FM have greater psychological adjustment problems, a profile that was called psychopathological profile B (profile DP according to the MMPI-2). It has even been shown that alterations in the affective sphere (among them, FM) have a strong familiar aggregation,^{65,66} indicating a “hereditary” role in determined psychopathological alterations. The key aspect in the identification of these patients is the demonstration that the psychopathological process precedes FM diagnosis.

- Simulated fibromyalgia (type IV). Several studies have identified a subgroup of patients who simulate FM, which has characteristics that are easily known upon searching through the internet and because it is a disease in which the lack of a diagnostic test impedes a firm diagnosis.^{11,16,17,67} The enormous media and social impact of FM has led to an exponential increase in the visits received by primary care physicians mainly, as well as rheumatologists, on the part of patients who have a clinical syndrome suggesting FM. The main objective of this subgroup is to obtain permanent job disability compensation, and almost pathognomonically stop attending their visits to the physician once their objective has been met. We have not identified any study that proposes a protocol to evaluate and identify these patients and only one demonstrated a larger degree of pain reported by patients soliciting job disability payments when compared to those not requesting it.⁶⁷ We have identified a series of objective tests for evaluating patients with FM which could be applied to differentiate a simulation and could form a part of the study

Table 2
Prevalence of fibromyalgia (FM) in young patients with chronic disease

	Patients with FM/total patients	%	References
Sjögren’s syndrome	115/371	31	35-39,43
Rheumatoid arthritis	40/150	27	40,41
Ankylosing spondylitis	9/36	25	42
Osteoarthritis		28/130	22 40,43
Chronic cervical/lumbar pain	16/100	16	40
HIV infection	30/191	16	41,44
Behçet’s disease	44/268	16	45,47
Psoriatic arthritis	28/185	15	41,48
HCV infection	42/320	13	49-52
Systemic lupus erythematosus	133/1166	11	53-59
Scleroderma	1/50	2	58

Abbreviations: HCV, hepatitis C virus; HIV, human immunodeficiency virus.

Table 1
Fibromyalgia (FM) classification proposal

	Classification subgroups	Primary disease	Autoimmune/rheumatic disease	Psychopathological profile
Type I	FM Idiopathic	None	None	Normal
Type II	FM related to chronic disease	Chronic-systemic disease (IIa)- locoregional (IIb)	Compliance with classification criteria	Profile A (anxious-depressive)
Type III	FM secondary to psychiatric disease	Psychiatric disease	Isolated autoimmune and/ or rheumatic condition	Profile B (somatization)
Type IV	FM Simulated	None	None	Demanding

Table 3
Study protocol for the patient with fibromyalgia (FM) and suspected simulation

1. Evaluation of the FM criteria (trigger point count)
2. Evaluation of "control" trigger points
3. FIQ questionnaire
4. Evaluation of allodynia induced by sphygmomanometer cuff
5. Walking test (6 min)

protocol of these patients, mainly because we have expected objective measurements both in the general population as well as in FM patients^{16,17,68,69} (Table 3). Obtaining extreme values in each one of these tests can easily detect the simulating patient.

Discussion

The confusion that has historically surrounded the definition of the different processes related to chronic pain (fibromyalgia, fibrositis, myofascial pain, chronic fatigue, or pain syndrome, etc.) has led certain authors to be extremely critical of employing these nomenclature and to propose that the existing medical evidence shows that these "labels" are not supported by solid and consistent examination data or analytical or histological evidence.⁷⁰ However, most of these processes share a great amount of socio-demographic characteristics, as well as symptoms and psychological and psychiatric alterations.⁷⁰⁻⁷²

Numerous authors have posed the question of whether FM should be considered more as a heterogeneous group of patients with similar (non-specific) symptoms rather than a defined disease.^{10,72-76} Some even state that the initial concept of FM as a "muscular disease" must currently be reviewed and transformed into a concept they call "central hypersensitivity."⁷⁷ An optimal diagnostic and therapeutic approach in the patient with FM must include the greatest degree of individualization possible, according to the specific characteristics of each patient. The contrary is normally what occurs in daily clinical practice, in which the same treatment or approach is employed in every patient with FM. Classification of patients with FM into more homogeneous subgroups allows a larger individualization of treatment, leading to greater therapeutic success.²⁰ This systematic review has shown the importance of including the main processes and diseases related to FM, which are clearly related to the different psychopathological profiles described above.

In the first subgroup of patients with FM, there are no concomitant systemic or local processes and, therefore, the complete etiology and pathogenesis of the process is unknown. Müller et al³¹ compared the plasma cytokine profile of 25 patients with type I FM with that of 13 patients with type II FM; they found significantly elevated concentrations of tumor necrosis factor alpha (TNF α), IL-1 α , and IL-10 in type I. This data indicated possible local immune alterations, perhaps related to nerve endings, something that falls into the field of neuroimmunology. The most recent hypothesis on the etiopathogenesis of chronic pain indicates that a key role of innate immunity of the central nervous system in the conscious induction phase of hypersensitivity, with the implication, among others, of Toll receptors in the microglia.⁷⁸ This subgroup of patients probably requires a different therapeutic approach of most of the patients with FM. Some authors^{29,31} indicate that for this subgroup presents a larger benefit of pharmacologic therapy centered on the main symptom, especially antidepressive drugs with analgesic properties, or even pure analgesics (simple or combined). Assistance health coordination through the use of diagnostic protocols and especially therapeutic ones between family physicians and specialized units in the management of chronic pain (where ever they can be found) is

a fundamental element for symptom control in these patients. Lack of a psychiatric affection per se eliminates the usefulness of psychological treatment or the use of psychopharma.

In FM type II (associated to chronic rheumatic and autoimmune disease), the main etiopathogenic hypothesis would be the appearance of FM as a consequence of the chronic character of the underlying disease,³⁰ making it important to define, as exactly as possible, the moment of the diagnosis of the underlying disease and the date in which FM was diagnosed. It is not always easy and in this group one could even include patients with the simultaneous appearance of both processes, but one must always try to separate the appearance of the baseline diseases (complying with its respective criteria), from FM. Blasco et al³⁰ defined in these patients a concrete psychopathological profile (profile A), typically related to chronic diseases in which anxious-depressive symptoms predominate with an important mutual influence between both processes (DC type psychopathological profile in the MMPI-2). The identification of this psychopathological profile on the part of the specialist (Table 4) is of great help in order to correctly classify this subgroup of patients. From a therapeutic point of view, the main effort should be aimed at controlling the main symptoms of the baseline disease, which can be joint pain in rheumatoid arthritis, spondylitis and systemic lupus erythematosus (SLE), muscle inflammation (myopathies), or other general and local symptoms (sicca symptoms in Sjögren's syndrome). It is common to find chronic fatigue in most if not all of these patients, as well as generalized joint and muscle pain, which tend to respond positively to the use of antimalarials such as hydroxychloroquine. During acute flares of these diseases, the use of anti-inflammatory drugs and steroids is inevitable and, in more severe cases, immunosuppressants and even biologic therapy. The objective should always be to have maximal control over the baseline rheumatic or autoimmune disease, a fact that will help in a large way to separate the symptoms of the baseline disease to those derived from the secondary psychopathological problem. Of course, the almost invariable appearance of psychopathological alterations that appear in patients with a chronic and incurable disease must be taken into account. An adequate psychopathologic evaluation should confirm in these patients that the symptoms are due to the underlying disease, and that the psychiatric symptoms present are considered as an adaptive response to the difficulty involved in dealing on a daily basis with the symptoms of the baseline disease. The psychopathological focus should be different with respect to other subgroups and Giesecke et al²⁹ point to the fact that the use of behavioral-cognitive techniques in these patients would have a lesser chance of being effective. Due to their conversive personality, these patients may be resistant to comprehending their problem as well as to psychological intervention.³⁰

In the third subgroup (FM type III), FM can be considered as a somatic manifestation of a severe underlying psychopathological process, both in the affective as in the personality sense,³⁰ in which pain would be the medium in which the patients would channel all of the underlying psychological malaise. In this subgroup of patients, the primary character of the psychopathological symptoms predominates (that inherent to disease). Rubin⁷⁹ proposes the evaluation of different aspects that can help to identify a psychosomatic origin of pain, such as present or past history of abuse, severe trauma and the recognition of personality alterations which may be related or of predisposing family settings. According to Blasco et al,³⁰ patients with FM present greater psychological maladjustments, a profile they denominated psychopathological profile B (profile DP according to the MMPI-2) (Table 4). As for the characteristics of the personality traits in these patients, it must be said that the patients that form this type of profile have enhanced traits of an avoiding, dependent and

Table 4

Main psychopathological aspects of patients with fibromyalgia (classification by Blasco et al³⁰)

<p>1. Psychopathological profile A</p> <ul style="list-style-type: none"> • Preoccupation due to somatic symptoms • Mild anxiety over health problems • Tendency to develop physical symptoms under stress • Social competence (expressive persons) • Wish to be considered as sure of themselves, happy, friendly, caring, and responsible • Intention of normalizing life and overcoming symptoms • Avoidance conduct regarding disagreeable or upsetting situations • Subtle avoidance of responsibility • Considered as dependent more by others than themselves <p>2. Psychopathological profile B</p> <ul style="list-style-type: none"> • Limited resources when confronting stress • Demands help upon perceiving difficulty • Larger emphasis on cognitive, sensory, osteomuscular, and neurological symptoms • Symptoms of confusion, fear, and malaise • Reserved personality, non-committal, and tendency to daydream, and fantasize • High degree of anxiety, tension, and dysphoria • Great dependency • Fear of conflict, inhibition of ire and tolerance of domination • Introversion, lack of self-confidence • Hyper reactive and hypersensitive to criticism • Sensation of being abused of, tendency to being controlled and submissive • Extreme vulnerability to be upset by deception or difficulty; tendency to abandon when faced with the slightest anxiety • Ruminations, dysphoria, apprehension, changes in mood, preoccupation, fatigue, pessimism, lack of interest, self-criticism, and irritability • Low self-esteem and low threshold for self-censure and self-criticism • Elevated frequency of personality problems (group C, group A, group B)

obsessive (group C), paranoid, schizoid, schizotypal (group A), and borderline (group B) personality. They are less histrionic and narcissistic than the normal population, something that according to Blasco et al³⁰ is in contrast with the vision that physicians in general might have of them. With respect to the antisocial personality traits, they are similar to those seen in the population at large. In conclusion, patients in this group are characterized by a considerable general maladjustment, feelings of personal immaturity and subjective stress in group A, making it necessary to approach their disease from a mental health angle mainly.³⁰ The predominant role of the psychopathological alteration, with elevated degrees of psychopathological stress, make it necessary to share patient care between the family physician, psychologists and psychiatrists, using behavioral techniques and drugs such as antidepressants, selective serotonin uptake inhibitors and others. Exclusive psychotherapeutic treatment of this subgroup of patients should never be centered on physical symptoms (mainly pain), but over all in treating the underlying psychiatric disease.⁷¹

Symptoms associated to FM, because of their variability, can lead us to consider rheumatic or autoimmune diseases in patients with type III FM. The presence of joint pain (very rarely arthritis), muscle pain, fatigue, fever, soft-tissue edema, headaches, digestive alterations, and mucosal dryness can easily lead the clinician to add the diagnosis of a systemic disease to FM, especially if laboratory analysis (cytopenia) or immune test abnormalities are seen. The clinical and immunologic profile of the patient with FM should be analyzed in detail by a specialist in rheumatic/autoimmune systemic diseases. In that way immune alterations that frequently coexist in patients with FM (antinuclear antibodies, anti-smooth muscle antibodies, or low titer rheumatoid factor) can be differentiated from the more specific immune markers associated to systemic autoimmune disease

Table 5

Immune alterations that oblige the performance of a specific study to determine if a systemic autoimmune disease or defined rheumatic disease is present

<p>High-titer antinuclear antibodies (>1/320) Elevated titer of rheumatoid factor (>200) Cryoglobulinemia >1% Low complement (reduction in C3 and/or C4) Anti-Ro/La antibodies Anti-Sm antibodies Anti-Scl70/antitopoisomerase I antibodies High titer anti-DNA antibodies (>50) Anti-CCP antibodies</p>
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(high titer anti-DNA, low complement, anti-ENA, or anti cyclic citrullinated peptide antibodies) (Table 5).

In summary, in order to correctly classify a patient with FM, we recommend an individual diagnostic evaluation on the part of different specialists (multidisciplinary diagnostic approximation¹⁰). In first place, the diagnosis of FM must be confirmed (family physician and/or rheumatologist) and then, the evaluation of possible systemic, concomitant diseases (family physician, rheumatologist and systemic disease specialist) or local chronic processes (family physician, rheumatologist and trauma specialist) must be made, in order to finally perform a precise diagnosis on the processes or baseline psychopathologic diseases (psychologist or psychiatrist).

Obtaining a clear diagnosis in each one of these 4 areas, as well as the temporal analysis of the appearance of different symptoms or processes will allow for the inclusion of each patient into each one of the classification subgroups.

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References

1. Consensus Document on Fibromyalgia: The Copenhagen Declaration. *Journal Musculoskeletal Pain*, Vol. 1. New York: The Haworth Press; 1993.
2. WHO. International Statistical Classification of Diseases and Related Problems. ICD-10. Geneva: WHO; 1992.
3. Rivera Redondo J. Controversias en el diagnóstico de fibromialgia. *Rev Esp Reumatol*. 2004;31:501-6.
4. Ramos-Casals M, Brito-Zerón P, Font J. The overlap of Sjögren's syndrome with other systemic autoimmune diseases. *Semin Arthritis Rheum*. 2007;36:246-55.
5. Salliot C, Mouthon L, Ardizzone M, Sibilia J, Guillemin L, Gottenberg JE, et al. Sjögren's syndrome is associated with and not secondary to systemic sclerosis. *Rheumatology (Oxford)*. 2007;46:321-6.
6. Tektonidou MG, Anapliotou M, Vlachoyiannopoulos P, Moutsopoulos HM. Presence of systemic autoimmune disorders in patients with autoimmune thyroid diseases. *Ann Rheum Dis*. 2004;63:1159-61.
7. Wolfe F, Smythe HA, Yunus MB, Bennett RM, Bombardier C, Goldenberg DL, et al. The American College of Rheumatology 1990 Criteria for the Classification of Fibromyalgia. Report of the Multicenter Criteria Committee. *Arthritis Rheum*. 1990;33:160-72.
8. Provenzano DA, Fanciullo GJ, Jamison RN, McHugo GJ, Baird JC. Computer assessment and diagnostic classification of chronic pain patients. *Pain Med*. 2007;8 Suppl 3:S167-75.
9. Cöster L, Kendall S, Gerdle B, Henriksson C, Henriksson KG, Bengtsson A. Chronic widespread musculoskeletal pain - A comparison of those who meet criteria for fibromyalgia and those who do not. *Eur J Pain*. Nov 14, 2007 [Epub ahead of print].
10. Endresen GK. Fibromyalgia: a rheumatologic diagnosis? *Rheumatol Int*. 2007; 27:999-1004.

11. McVeigh JG, Finch MB, Hurley DA, Basford JR, Sim J, Baxter GD. Tender point count and total myalgic score in fibromyalgia: changes over a 28-day period. *Rheumatol Int.* 2007;27:1011-8.
12. Harden RN, Revivo G, Song S, Nampiaparampil D, Golden G, Kirincic M, et al. A critical analysis of the tender points in fibromyalgia. *Pain Med.* 2007;8:147-56.
13. Tastekin N, Birtane M, Uzunca K. Which of the three different tender points assessment methods is more useful for predicting the severity of fibromyalgia syndrome? *Rheumatol Int.* 2007;27:447-51.
14. Cott A, Parkinson W, Bell MJ, Adachi J, Bédard M, Cividino A, et al. Interrater reliability of the tender point criterion for fibromyalgia. *J Rheumatol.* 1992;19:1955-9.
15. Croft P, Burt J, Schollum J, Thomas E, Macfarlane G, Silman A. More pain, more tender points: is fibromyalgia just one end of a continuous spectrum? *Ann Rheum Dis.* 1996;55:482-5.
16. Khostanteen I, Tunks ER, Goldsmith CH, Ennis J. Fibromyalgia: can one distinguish it from simulation? An observer-blind controlled study. *J Rheumatol.* 2000;27:2671-6.
17. Campbell SM, Clark S, Tindall EA, Forehand ME, Bennett RM. Clinical characteristics of fibrositis. I. A blinded controlled study of symptoms and tender points. *Arthritis Rheum.* 1983;26:817-24.
18. Croft P, Schollum J, Silman AJ. Population study of tender point counts and pain as evidence of fibromyalgia. *BMJ.* 1994;310:696-9.
19. Schochat T, Raspe H. Elements of fibromyalgia in an open population. *Rheumatology.* 2002;42:829-35.
20. Turk DC. The potential of treatment matching for subgroups of patients with chronic pain: lumping versus splitting. *Clin J Pain.* 2005;21:44-55.
21. Masi AT, White KP, Pilcher JJ. Person-centered approach to care, teaching, and research in fibromyalgia syndrome: justification from biopsychosocial perspectives in populations. *Semin Arthritis Rheum.* 2002;32:71-93.
22. Rosenberg EF. Classification and management of fibrositis. *Med Clin North Am.* 1958;42:1613-27.
23. Vitali C, Taroni A. Criteria for the classification of primary fibromyalgia syndrome (fibrositis): an unsolved problem. *Clin Exp Rheumatol.* 1989;7:1-3.
24. Turk DC, Okifuji A, Sinclair JD, Starz TW. Differential responses by psychosocial subgroups of fibromyalgia syndrome patients to an interdisciplinary treatment. *Arthritis Care Res.* 1998;11:397-404.
25. Turk DC, Okifuji A, Sinclair JD, Starz TW. Pain, disability, and physical functioning in subgroups of patients with fibromyalgia. *J Rheumatol.* 1996;23:1255-62.
26. Turk DC, Flor H. Primary fibromyalgia is greater than tender points: toward a multiaxial taxonomy. *J Rheumatol Suppl.* 1989;19:80-6.
27. Hurtig IM, Raak RI, Kendall SA, Gerdle B, Wahren LK. Quantitative sensory testing in fibromyalgia patients and in healthy subjects: identification of subgroups. *Clin J Pain.* 2001;17:316-22.
28. Raak R, Hurtig I, Wahren LK. Coping strategies and life satisfaction in subgrouped fibromyalgia patients. *Biol Res Nurs.* 2003;4:193-202.
29. Giesecke T, Williams DA, Harris RE, Cupps TR, Tian X, Tian TX, et al. Subgrouping of fibromyalgia patients on the basis of pressure-pain thresholds and psychological factors. *Arthritis Rheum.* 2003;48:2916-22.
30. Blasco Claros L, Mallo Caño M, Mencía Presa A, Franch Barceló J, Casaus Satama'n P, Peña Roca J, et al. Clinical profiles in fibromyalgia patients of the community mental health center: a predictive index of psychopathological severity. *Actas Esp Psiquiatr.* 2006;34:112-22.
31. Müller W, Schneider EM, Stratz T. The classification of fibromyalgia syndrome. *Rheumatol Int.* 2007;27:1005-10.
32. Bliddal H, Danneskiold-Samsøe B. Chronic widespread pain in the spectrum of rheumatological diseases. *Best Pract Res Clin Rheumatol.* 2007;21:391-402.
33. Weir PT, Harlan GA, Nkoy FL, Jones SS, Hegmann KT, Gren LH, et al. The incidence of fibromyalgia and its associated comorbidities: a population-based retrospective cohort study based on International Classification of Diseases, 9th Revision codes. *J Clin Rheumatol.* 2006;12:124-8.
34. Aaron LA, Burke MM, Buchwald D. Overlapping conditions among patients with chronic fatigue syndrome, fibromyalgia, and temporomandibular disorder. *Arch Intern Med.* 2000;160:221-7.
35. Giles I, Iseberg D. Fatigue in primary Sjögren's syndrome: Is there a link with the fibromyalgia syndrome? *Ann Rheum Dis.* 2000;59:875-8.
36. Ostuni P, Botsios C, Sfriso P, Punzi L, Chieco-Bianchi F, Semeraro L, et al. Fibromyalgia in Italian patients with primary Sjögren's syndrome. *Joint Bone Spine.* 2002;69:51-7.
37. Dohrenbusch R, Gruterich M, Genth E. [Fibromyalgia and Sjogren syndrome - clinical and methodological aspects]. *Z Rheumatol.* 1996;55:19-27.
38. Tishler M, Barak Y, Paran D, Yaron M. Sleep disturbances, fibromyalgia and primary Sjogren's syndrome. *Clin Exp Rheumatol.* 1997;15:71-4.
39. Belenguier R, Ramos-Casals M, Brito-Zerón P, del Pino J, Sentís J, Aguiló S, et al. Influence of clinical and immunological parameters on the health-related quality of life of patients with primary Sjögren's syndrome. *Clin Exp Rheumatol.* 2005;23:351-6.
40. Wolfe F, Cathey MA. Prevalence of primary and secondary fibrositis. *J Rheumatol.* 1983;10:965-8.
41. Buskila D, Gladman DD, Langevitz P, Urowitz S, Smythe HA. Fibromyalgia in human immunodeficiency virus infection. *J Rheumatol.* 1990;17:1202-6.
42. Aloush V, Ablin JN, Reitblat T, Caspi D, Elkayam O. Fibromyalgia in women with ankylosing spondylitis. *Rheumatol Int.* 2007;27:865-8.
43. Vitali C, Taroni A, Neri R, Castrogiovanni P, Pasero G, Bombardieri S. Fibromyalgia features in patients with primary Sjögren's syndrome. Evidence of a relationship with psychological depression. *Scand J Rheumatol.* 1989;18:21-7.
44. Simms RW, Zerbini CA, Ferrante N, Anthony J, Felson DT, Craven DE. Fibromyalgia syndrome in patients infected with human immunodeficiency virus. The Boston City Hospital Clinical AIDS Team. *Am J Med.* 1992;92:368-74.
45. Lee SS, Yoon HJ, Chang HK, Park KS. Fibromyalgia in Behçet's disease is associated with anxiety and depression, and not with disease activity. *Clin Exp Rheumatol.* 2005;23:515-9.
46. Al-Izzi MK, Jabber AS. Fibromyalgia in Iraqi patients with Behcet's disease. *J Med Liban.* 2004;52:86-90.
47. Yavuz S, Fresko I, Hamuryudan V, Yurdakul S, Yazici H. Fibromyalgia in Behçet's syndrome. *J Rheumatol.* 1998;25:2219-20.
48. Chandran V, Bhella S, Schentag C, Gladman DD. Functional assessment of chronic illness therapy-fatigue scale is valid in patients with psoriatic arthritis. *Ann Rheum Dis.* 2007;66:936-9.
49. Kozanoglu E, Canatoglu A, Abayli B, Colakoglu S, Goncu K. Fibromyalgia syndrome in patients with hepatitis C infection. *Rheumatol Int.* 2003;23:248-51.
50. Goulding C, O'Connell P, Murray FE. Prevalence of fibromyalgia, anxiety and depression in chronic hepatitis C virus infection: relationship to RT-PCR status and mode of acquisition. *Eur J Gastroenterol Hepatol.* 2001;13:507-11.
51. Rivera J, de Diego A, Trinchet M, García Monforte A. Fibromyalgia-associated hepatitis C virus infection. *Br J Rheumatol.* 1997;36:981-5.
52. Buskila D, Shnaider A, Neumann L, Zilberman D, Hilzenrat N, Sikuler E. Fibromyalgia in hepatitis C virus infection. Another infectious disease relationship. *Arch Intern Med.* 1997;157:2497-500.
53. Kuriya B, Gladman DD, Ibañez D, Urowitz MB. Quality of life over time in patients with systemic lupus erythematosus. *Arthritis Rheum.* 2008;59:181-5.
54. da Costa D, Dritsa M, Bernatsky S, Pineau C, Ménard HA, Dasgupta K, et al. Dimensions of fatigue in systemic lupus erythematosus: relationship to disease status and behavioral and psychosocial factors. *J Rheumatol.* 2006;33:1282-8.
55. Akkasilpa S, Goldman D, Magder LS, Petri M. Number of fibromyalgia tender points is associated with health status in patients with systemic lupus erythematosus. *J Rheumatol.* 2005;32:48-50.
56. Valencia-Flores M, Cardiel MH, Santiago V, Resendiz M, Castaño VA, Negrete O, et al. Prevalence and factors associated with fibromyalgia in Mexican patients with systemic lupus erythematosus. *Lupus.* 2004;13:4-10.
57. Friedman AW, Tewi MB, Ahn C, McGwin Jr. G, Fessler BJ, Bastian HM, et al. LUMINA Study Group. Systemic lupus erythematosus in three ethnic groups: XV. Prevalence and correlates of fibromyalgia. *Lupus.* 2003;12:274-9.
58. Ostuni P, Botsios C, Sfriso P, Bertagnin A, Cozzi F, Doria A, et al. Prevalence and clinical features of fibromyalgia in systemic lupus erythematosus, systemic sclerosis and Sjögren's syndrome. *Minerva Med.* 2002;93:203-9.
59. Taylor J, Skan J, Erb N, Carruthers D, Bowman S, Gordon C, et al. Lupus patients with fatigue is there a link with fibromyalgia syndrome? *Rheumatology (Oxford).* 2000;39:620-3.
60. Littlejohn G. Regional pain syndrome: clinical characteristics, mechanisms and management. *Nat Clin Pract Rheumatol.* 2007;3:504-11.
61. Merskey H. Physical and psychological considerations in the classification of fibromyalgia. *J Rheumatol Suppl.* 1989;19:72-9.
62. Hudson JT, Hudson MS, Pliner LF, Goldenberg DL, Pope Jr. HG. Fibromyalgia and major affective disorders: a controlled phenomenology and family history study. *Am J Psychiatry.* 1985;142:441-6.
63. Fink P. Physical complaints and symptoms of somatizing patients. *J Psychosom Res.* 1992;36:125-36.
64. Celiker R, Borman P, Ökaten F, Gökçe-Kutsal Y, Başgöze O. Psychological disturbance in fibromyalgia: relation to pain severity. *Clin Rheumatol.* 1997;16:179-84.
65. Hudson JI, Mangweth B, Pope HG, de Col C, Hausmann A, Gutweniger S, et al. Family study of affective spectrum disorder. *Arch Gen Psychiatry.* 2003;60:170-7.
66. Hazemeijer I, Rasker JJ. Fibromyalgia and the therapeutic domain. A philosophical study on the origins of fibromyalgia in a specific social setting. *Rheumatology (Oxford).* 2003;42:507-15.
67. Häuser W. Self-assessed pain intensity and disability in subjects diagnosed with fibromyalgia claiming retirement pension. *Schmerz.* 2007;21:539-44.
68. Vargas A, Vargas A, Hernández-Paz R, Sánchez-Huerta JM, Romero-Ramírez R, Amezcua-Guerra L, et al. Sphygmomanometry-evoked allodynia - a simple bedside test indicative of fibromyalgia: a multicenter developmental study. *J Clin Rheumatol.* 2006;12:272-4.
69. Pankoff BA, Overend TJ, Lucy SD, White KP. Reliability of the six-minute walk test in people with fibromyalgia. *Arthritis Care Res.* 2000;13:291-5.
70. Pearce JM. Myofascial pain, fibromyalgia or fibrositis? *Eur Neurol.* 2004;52:67-72.
71. Henningsen P, Zipfel S, Herzog W. Management of functional somatic syndromes. *Lancet.* 2007;369:946-55.
72. Henningsen P, Zimmermann T, Sattel H. Medically unexplained physical symptoms, anxiety, and depression: a meta-analytic review. *Psychosom Med.* 2003;65:528-33.

73. Schochat T, Raspe H. Elements of fibromyalgia in an open population. *Rheumatology (Oxford)*. 2003;42:829-35.
74. Ehrlich GE, editor. Fibromyalgia is not a diagnosis: comment on the editorial by Crofford and Clauw. *Arthritis Rheum*. 2003;48:276.
75. Quintner JL, Cohen ML. Fibromyalgia falls foul of a fallacy. *Lancet*. 1999;353:1092-4.
76. Bjørndal A. There are no diseases, there are only ill persons – about our use of the fibromyalgia concept. *Tidsskr Nor Laegeforen*. 1993;113:2793-4.
77. Bennett R. Fibromyalgia: present to future. *Curr Rheumatol Rep*. 2005;7:371-6.
78. McCleskey EW. Neurobiology: new player in pain. *Nature*. 2003;424:729-30.
79. Rubin JJ. Psychosomatic pain: new insights and management strategies. *South Med J*. 2005;98:1099-110.