Agri 2016;28(4):165–170
doi: 10.5505/agri.2016.48243

ORIGINAL ARTICLE

Prevalence of fibromyalgia in Turkish geriatric population and its impact on quality of life

Türk geriatrik popülasyonda fibromiyalji prevalansı ve yaşam kalitesi üzerindeki etkisi

Yeşim GARİP,[1] Dilek ÖZTAŞ,[2] Tuba GÜLER[3]

Summary

Objectives: The aim of the present study was to examine the presence of fibromyalgia (FM) in elderly adults and to evaluate the impact of the severity of FM on quality of life.

Methods: A total of 100 patients between 65 and 80 years of age were included. The main admission diagnosis of the patients was recorded. Presence of FM was evaluated based on 1990 American College of Rheumatology (ACR) diagnostic criteria. The FM group was comprised of 31 patients fulfilling these criteria, and the remaining 69 patients composed the non-FM group. Tender point count (TPC) and common symptoms were recorded. FM disease severity was assessed using Fibromyalgia Impact Questionnaire (FIQ). Nottingham Health Profile (NHP) was used to evaluate quality of life. Pain severity was measured using Visual Analog Scale (VAS).

Results: Rate of FM was found to be 31%. FM patients scored significantly higher on pain, sleep, social isolation, and emotional reactions subgroups of NHP when compared to controls ($p<0.05$). TPC and FIQ were not affected by gender difference ($p>0.05$), but reduced with increasing age ($p<0.01$). FIQ and TPC were found to be correlated with only the pain and emotional reactions subgroups of NHP ($p<0.01$). There was no statistically significant correlation between FIQ and TPC and the physical mobility, sleep, energy, and social isolation subgroups of NHP ($p>0.05$).

Conclusion: Although FM is known as a disease of young and middle-aged women, our study indicates that its prevalence increases with age. FM is associated with poor quality of life in terms of pain, sleep, social, and emotional functions.

Keywords: Aged; fibromyalgia; pain; quality of life.

Özet

Amaç: Çalışmamızda, yaşlı erişkinlerde fibromiyalji (FM) varlığını araştırmak ve FM hastalık şiddetinin yaşam kalitesi üzerine etkisini değerlendirmeyi amaçladık.

Gereç ve Yöntem: Çalışmamıza 65– 80 yaş arası 100 hasta dahil edildi. FM varlığı 1990 Amerikan Romatoloji Derneği [American College of Rheumatology (ACR)] kriterleri baz alınarak değerlendirildi. Hastaların ana başvuru tanıları kaydedildi. Bu kriterleri karşılayan 31 hasta FM grubunda, geri kalan 69 hasta ise FM olmayan grupta yer aldı. Hassas nokta sayısı [tender point count (TPC)] ve sık görülen semptomlar kaydedildi. FM hastalık şiddeti, Fibromiyalji Etki Ölçeği [Fibromyalgia Impact Questionnaire (FIQ)] ile değerlendirildi. Yaşam kalitesini değerlendirmede Nottingham Sağlık Profili [Nottingham Health Profile (NHP)] kullanıldı. Ağrı şiddeti Görsel Analog Skala-ağrı (Visual Analog Scale [VAS]-pain) ile ölçüldü.

Bulgular: Çalışmamızda FM oranı %31 olarak bulundu. FM hastaları kontrollerle karşılaştırıldığında NHP'nin ağrı, uyku, sosyal izolasyon ve emosyonel reaksiyon alt gruplarında belirgin olarak daha yüksek skorlama gösterdiler ($p<0.05$). TPC ve FIQ; cinsiyet farklılığından etkilenmedi, ancak yaş ile azalma gösterdi ($p<0.01$). FIQ ve TPC; NHP'nin sadece ağrı ve emosyonel reaksiyonlar alt grupları ile korele bulundu ($p<0.01$). FIQ ve TPC ile NHP'nin fiziksel mobilite, uyku, enerji ve sosyal izolasyon alt grupları arasında istatistiksel olarak anlamlı korelasyon yoktu ($p>0.05$).

Sonuç: FM genç ve orta yaşlı kadınların hastalığı olarak bilinmesine rağmen, çalışmamız prevalansının yaş ile arttığına dikkat çekmektedir. FM, yaşlı popülasyona ağrı, uyku, sosyal ve emosyonal fonksiyonlar açısından kötü yaşam kalitesi ile ilişkilidir.

Anahtar sözcükler: Yaşlı; fibromiyalji; yaşam kalitesi; ağrı.

[1]Pınar Physical Therapy and Rehabilitation Center, Ankara, Turkey
[2]Department of Public Health, Yıldırım Beyazıt University Faculty of Medicine, Ankara, Turkey
[3]Department of Physical Medicine and Rehabilitation, Derince Training and Research Hospital, Kocaeli, Turkey

Submitted: 11.09.2015 **Accepted after revision:** 02.06.2016

Correspondence: Dr. Yeşim Garip. Pınar Fizik Terapi ve Rehabilitasyon Merkezi, Ankara, Turkey.
Tel: +90 - 312 - 269 17 17 **e-mail:** dryesimgarip@gmail.com

Introduction

Fibromyalgia (FM) is a musculoskeletal disorder characterized by widespread pain resulting from dysregulation of pain-processing mechanisms.[1] Although the main symptom of FM is bodily pain, patients may also experience additional symptoms such as fatigue, non-restorative sleep, stiffness, headache, dizziness, muscle spasms and paresthesia.[2,3] Although pathogenesis of FM is not clearly understood, it is thought to result from immune dysregulation, oxidative stress and mitochondrial dysfunction, and hypothalamic- pituitary- adrenal axis abnormalities.[4]

Epidemiological research has shown that prevalence of fibromyalgia in the general population ranges between 2%–%7 with a rate increasing with age.[5] The mean age for diagnosis is 47 years, with a female-male ratio of 9:1.[3] In contrast to most studies focusing on FM in the general population, little attention has been given to FM symptoms occurring in elderly adults.[1]

The main aims of the present study were to assess presence of FM in elderly patients and to analyze the impact of FM disease severity on quality of life (QoL).

Material and Methods

A total of 100 patients aged between 65 and 80 applying to outpatient physical medicine and rehabilitation clinics of two hospitals were included in the study. All of the patients signed the informed consent forms. The study protocol was approved by the Medical Research Ethics Committee of medical faculty. The study conforms to the provisions of the World Medical Association's Declaration of Helsinki.

Exclusion criteria were rheumatic diseases such as rheumatoid arthritis, ankylosing spondylitis, generalized OA and endocrine diseases such as hypogonadism, thyroid and parathyroid disorders and malignancies. Generalized OA was diagnosed based on Dougados Criteria:[6] consisting of either bilateral digital OA or bilateral knee OA plus OA of the spine. The main admission diagnosis of the patients including focal OA, epin calcanei, carpal tunnel syndrome, meralgia paresthetica and restless leg syndrome was recorded. Presence of FM was evaluated based on 1990 American College of Rheumatology (ACR) diagnostic criteria:[7] 1) chronic generalized pain in both sides of the body, both axial and peripheral, below and above the waist; 2) the presence of at least 11 of 18 tender points on digital palpation with a pressure of approximately 4 kg/cm^2. Tender point count (TPC) was measured by the same researcher. 31 patients fulfilling these criteria participated in FM group, and the remaining 69 patients formed non-FM group. Common FM symptoms including fatigue, headache, paresthesia, sleep disturbance, irritable bowel and bladder syndrome were noted. Fibromyalgia Impact Questionnaire (FIQ) was used for determining disease severity[8] and Nottingham Health Profile (NHP) for QoL.[9] Pain severity was measured by using 10 cm Visual Analog Scale (VAS), a scale which is used to measure subjective characteristics that cannot be directly measured.[10]

Statistical analyses

Descriptive statistics (mean, median, SD [Standard deviation], minimum, maximum and frequencies) were used for assessing the demographics and clinical parameters. Differences among groups were evaluated by using independent samples T-test. Multiple regression analysis was used to determine factors affecting TPC and FIQ. The presence of correlation was determined by Pearson's correlation coefficient. A value of $p<0.05$ was accepted as statistically significant. All analyses were performed using IBM Statistical Package for the Social Sciences (SPSS) for Windows, Version 21.0 (Armonk, New York, USA).

Results

Demographic and clinical characteristics of the patients

A total of 100 patients (77 women, 23 men) were included in the study. Rate of FM was found as 31%. FM group consisted of 25 women and 6 men, and non-FM group consisted of 52 women and 17 men. Mean age was 69.47±5.41 (65–80) in FM group and 69.97±4.92 (65–80) in non-FM group. Age did not significantly differ among the groups (p=0.79). Mean TPC was 13.67±2.41 (11–18), and mean FIQ was 70.64±15.51 (44–100) in FM group. The most common symptom was fatigue (20 patients, 64.52%). This was followed by sleep disturbance (18 patients, 58.06%), headache (15 patients, 48.39%), irritable bowel and bladder syndrome (10 patients, 32.26%), and paresthesia (8 patients, 25.81%), respectively.

The primary diagnosis of the patients was as follows: FM group (lumbar spondylosis 25.8% [8 patients],

Table 1. Distribution of main admission diagnosis among groups

	FM group (n=31)		Non-FM Group 2 (n=69)		p
	n	%	n	%	<0.0001*
Lumbar spondylosis	8	25.8	12	17.4	
Cervical spondylosis	6	19.4	8	11.6	
Knee osteoarthritis	5	16.1	21	30.4	
Hip	0	0	14	20.3	
Shoulder	3	9.7	12	17.4	
Carpal tunnel syndrome	4	12.9	2	2.9	
Meralgia paresthetica	1	3.2	0	0	
Restless leg syndrome	2	6.5	0	0	
Epin calcanei	2	6.5	0	0	

FM: Fibromyalgia; *: p<0.05 (significant).

Table 2. Comparison of quality of life among the groups

	FM group (n=31)	Non-FM group (n=60)	p
	M±SD	M±SD	
NHP-pain	72.35±16.87	28.36±28.41	<0.0001**
NHP-physical mobility	51.21±25.48	56.34±28.57	0.393
NHP-energy	43.54±38.17	40.28±41.26	0.710
NHP-sleep	30.19±28.07	20.29±21.58	<0.0001**
NHP-social isolation	5.79±14.19	16.49±28.77	0.044*
NHP-emotional reactions	26.69±21.59	20.47±27.74	<0.0001**

FM: Fibromyalgia; M±SD: Mean±standard deviation; NHP: Nottingham Health Profile; *: p<0.05(significant); **: p<0.01 (highly significant).

cervical spondylosis 19.4% [6 patients], knee OA 16.1% [5 patients], carpal tunnel syndrome 12.9% [4 patients], shoulder OA 9.7% [3 patients], epin calcanei 6.5% [2 patients], restless leg syndrome 6.5% [2 patients] and meralgia paresthetica 3.2% [1 patient]) and non-FM group (knee OA 30.4% [21 patients], hip OA 20.3% [14 patients], shoulder OA 17.4% [12 patients], lumbar spondylosis 17.4% [12 patients], cervical spondylosis 11.6% [8 patients], carpal tunnel syndrome 2.9% [2 patients]). Meralgia paresthetica, restless leg syndrome and epin calcanei were found only in FM patients. Lumbar and cervical spondylosis and carpal tunnel syndrome were most frequently found in FM group, whereas knee, hip, shoulder osteoarthritis were found in non-FM group (p<0.0001) (Table 1).

Comparison of quality of life among the groups

FM patients scored significantly higher in pain, sleep, social isolation and emotional reactions subgroups of NHP when compared with the controls (p<0.05) (Table 2).

Impact of age and gender on FIQ and TPC

Multiple regression analysis showed TPC and FIQ scores reduced with increasing age (p<0.01). TPC and FIQ were not affected by gender differences (p>0.05). β coefficients and adjusted R2 values are given in Table 3.

The relation of FIQ and TPC with quality of life

FIQ and TPC were found to be correlated with only pain and emotional reactions subgroups of NHP (p<0.01). There was no statistically significant correlation between FIQ and TPC and physical mobility, sleep, energy and social isolation subgroups of NHP (p>0.05) (Table 4).

Table 3. Impact of age and gender on FIQ and TPC

	FIQ (Adjusted R^2:0.359)		TPC (Adjusted R^2: 0.483)	
Variables	**Beta**	**p**	**Beta**	**p**
Age	-0.587	<0.0001**	-0.644	<0.0001**
Gender	-0.277	0.069	-0.294	0.054

FIQ: Fibromyalgia impact questionnaire; TPC: Tender point count; **: p<0.01 (highly significant).

Table 4. The relation of FIQ and TPC with quality of life

	TPC	FIQ
NHP-pain		
r	0.780**	0.920**
p	<0.0001	<0.0001
NHP-physical mobility		
r	0.336	0.269
p	0.065	0.144
NHP- energy		
r	-0.339	-0.288
p	0.062	0.116
NHP- sleep		
r	-0.101	0.131
p	0.589	0.483
NHP-social isolation		
r	0.159	0.170
p	0.392	0.362
NHP-emotional reactions		
r	0.600**	0.752**
p	<0.0001	<0.0001

NHP: Nottingham Health Profile; TPC: Tender point count; FIQ: Fibromyalgia Impact Questionnaire; **: p<0.01 (highly significant).

Discussion

FM, a disorder characterized by chronic widespread pain accompanied by fatigue, non-restorative sleep and psychological distress, is common in physical medicine and rehabilitation and rheumatology clinics. The prevalence of FM has been reported as 3.4% in women and 0.5% in men. Its prevalence increases with age, with highest rates between 60 and 79 years (>7% in women).[5] This rate increases up to 15.7% in rheumatology[11] and 41.2% in pain clinics.[12]

In our study, the rate of fibromyalgia in Turkish patients aged between 65 and 80 years was 31%. Santos et al.[13] reported the prevalence of FM in Brazilian population in the same range of ages as 5.5%. Different results may be due to the samples of these studies. Our sample was composed of the patients applying to outpatient physical medicine and rehabilitation clinic because of pain symptoms. Similar to our findings, in the study of Lebleci et al.[14] conducted in Turkish geriatric population; frequency of FM was reported as 37.9% in elderly patients in physical medicine and rehabilitation clinic. Most of the studies in the literature indicate that increasing age is associated with higher prevalence of FM. This picture raises a question of why FM is thought to be a syndrome of young women. Wolfe et al.[5] suggested that pain in older individuals is thought to be linked with osteoarthritis and diagnosis of 'FM' is mostly missed.

In the current study, rate of lumbar spondylosis was found as 25.8%, cervical spondylosis 19.4%, knee OA 16.1%, carpal tunnel syndrome 12.9%, shoulder OA 9.7%, epin calcanei 6.5%, restless leg syndrome 6.5% and meralgia paresthetica 3.2% in FM group. Frequency of knee OA was reported to be 30.4%, hip OA 20.3%, shoulder OA 17.4%, lumbar spondylosis 17.4%, cervical spondylosis 11.6% and carpal tunnel syndrome 2.9% in non-FM group. Meralgia paresthetica, restless leg syndrome and epin calcanei were reported only in FM patients. Lumbar and cervical spondylosis and carpal tunnel syndrome were most frequently found in FM group, while knee, hip and shoulder osteoarthritis were mostly found in non-FM group.

More frequent lumbar and cervical spondylosis, carpal tunnel syndrome, meralgia paresthetica, restless leg syndrome and epin calcanei in FM group may be due to shared pain mechanisms for these conditions and FM. These pathophysiologic mechanisms are explained by abnormalities in the descending facilitatory and inhibitory pain pathways and central sensitization.[15] Co-occurrences of FM and these conditions were reported in previous studies.[15–17]

There are many studies in the literature which evaluate symptoms of FM patients regardless of age group. In the study of Sivas et al.[18] conducted in 80 Turkish FM patients aged between 20 and 57, the most common symptom was fatigue with a rate of 97.5%. Morning stiffness (77.5%) and sleep disor-

ders (71.3) followed it, respectively. On the other hand, Türkyılmaz et al.[19] reported the most common symptoms as fatigue (94.6%) and sleep disturbance (86.5%) in female patients with a mean age of 39.2. Our study sample was composed of patients over 65 years old and the most common symptom was fatigue (64.52%) in this age group. Sleep disturbance (58.06%), headache (48.39%), irritable bowel and bladder syndrome (32.26%), and paresthesia (25.81%) followed it, respectively. In study of Leblebici et al.[14] investigating FM patients in the same range of ages, similar results were reported. Fatigue was the most common symptom, and its frequency was 89.4%. Sleep disturbance was seen in 76.6% of the patients. Differently from our results, headache (83%) is more frequent in their study sample than in our series.

In our study, TPC and fibromyalgia severity reduced with increasing age. This finding is consistent with previous studies in the literature. In the study of Shillam et al.[20] where 533 adults with FM were assessed, it was reported that middle-aged adults were more symptomatic than older adults. Similarly in the study of Jiao et al.[21] younger and middle-aged FM patients had worse FM symptoms and poorer QoL than elderly patients who are older than 60 years old. Also Campos et al.[22] reported less impact of FM on physical and social dimensions of QoL in elderly women (≥60 years) than younger ones. They suggested that this might be due to perception of age-related expectations of younger patients. Younger patients are willing to be healthy and active, thus they do not tolerate the pain and symptoms of FM. In the study of Leblebici et al.[14] increasing age was found to be negatively correlated with TPC; however not correlated with FIQ. In contrast to these findings, Gürer et al.[23] reported a positive correlation between age and both TPC and FIQ.

In the present study, elderly FM patients had poorer QoL in pain, sleep, social isolation and emotional reactions subgroups when compared with the controls. Similarly, Campos et al.[22] assessed Spanish FM patients in the same age group and found impairment in all eight QoL domains of Short Form-36 (SF- 36).

There were several limitations in our study. The first one was relatively small number of FM patients and the second one was lack of control group involving young and middle-aged patients.

Although FM is thought to be as a disease seen among young and middle-aged women, its prevalence increases with age. Accompanying osteoarthritis in elderly patients may cause delay in the diagnosis of FM and as well as its treatment. In case of severe pain which is incompatible with the clinical and radiological findings, diagnosis of FM should be taken into account.

Conflict-of-interest issues regarding the authorship or article: None declared.

Peer-rewiew: Externally peer-reviewed.

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