

Fibromyalgia Syndrome in a sample of Iraqi patients with psoriasis

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Summary:

Background: Fibromyalgia syndrome and psoriasis share various soft problems. In addition, patients with psoriasis can experience subjective joint swelling and pain (Fibromyalgia syndrome) and objective swelling (Psoriatic arthritis) with the latter requiring systemic disease modifying antirheumatic drugs while the former requires anti-fibromyalgia measures.

Objective: To assess the rate of fibromyalgia syndrome in a sample of Iraqi patients with psoriasis.

Patients and Method: A sample of one hundred and twenty Iraqi patients with psoriasis and another one hundred and twenty healthy individuals matched for age and sex, serving as control group were studied. Full history was taken and complete clinical examination was done and various laboratory investigations were carried out for all individuals in both groups. The American College of Rheumatology 1990 criteria for Fibromyalgia syndrome were applied for individuals of both groups.

Results: Fibromyalgia was present in 32 (26.7%) psoriatic patients compared to 13 (10.8%) individuals of the control group ($P=0.0016$). We found that psoriatic arthritis as well as treatment with systemic therapy (chemotherapy) are significant predictors for development of Fibromyalgia in a rate of 17 (14.2%) (p value =0.001), 20 (16.7%) (p value =0.0001) respectively.

Conclusion: There is a significant association between Fibromyalgia Syndrome and psoriasis.

Keywords: Fibromyalgia, Psoriasis, Psoriatic arthritis.

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Introduction:

Fibromyalgia Syndrome (FMS): is a chronic non-inflammatory and non-autoimmune musculoskeletal disorder characterized primarily by diffuse musculoskeletal pain and sensitivity to mechanical stimulation at soft tissue tender points (1). In addition, patients subjectively often have morning stiffness less than one hour, fatigue, non-restorative sleep, and cognitive impairment, which further contribute to the severity of the disorder (2). Fibromyalgia Syndrome occurs in all age groups, with the prevalence of 2-3% in UK and USA, there is a strong female predominance of around 9-10/1 (3). The usual age of presentation is 20-50 years (4). In Iraq fibromyalgia affects 1.5% of Iraqi school children and adolescents (5). So fibromyalgia is considered as one of the community health problems (6). FMS has been linked to Genetic factors (7), Environmental influence (2), Abnormality in pain and sensory processing (8), Hypothalamus pituitary and autonomic dysfunction (9,10) and psychological factor (11). The American College of Rheumatology 1990 criteria for Classification of Fibromyalgia Syndrome were applied for diagnosis (12).

Psoriasis: A common, chronic, non-infectious, inflammatory and proliferative condition of the skin, in which both genetic and environmental influences have a critical role (13,14). The most characteristic lesions consist of red, scaly, well

demarcated, indurate plaques, present particularly over extensor surfaces and scalp (14,15). The prevalence of psoriasis shows variations according to ethnic groups, it is highest in Caucasians (~2% of population) and lowest in Asian and south American populations (16). It was equally reported in both sexes and its onset may be at any age, the first peak age of onset is 15-20 years and second peak is at the age of 55-60 years, it is uncommon below age 10 years (16,17). Genetic and autoimmune factors (18), environmental factors (18), and medications (18-20) have been involved in its pathogenesis. It has significant morbidity that necessitate treatment (21).

The aim of the study was to assess the rate of Fibromyalgia Syndrome in a sample of Iraqi patients with Psoriasis.

Patients and method:

A case control study was conducted at the Department of Dermatology and Department of Rheumatology in Baghdad Teaching Hospital during the period from December 2011 to May 2012. One hundred and twenty patients with psoriasis aged over 16 years, as a convenient sample, were enrolled in the study. Patients with other connective tissue diseases (e.g. systemic lupus erythematosus, rheumatoid arthritis) and endocrine disorders (e.g. hypothyroidism) were excluded. A similar number of an age and sex-matched, healthy individuals served as control group and were selected during the same period.

A full history and examination had been conducted to both

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groups, which included: patient's name, age, sex, level of education. Patients with psoriasis were fully assessed for their disease: type, duration, treatment and surface area involvement which had been measured according to the rule of nine. Features of Fibromyalgia Syndrome were assessed in both groups. The diagnosis of FMS was done according to the American College of Rheumatology (ACR) 1990 Classification criteria for Fibromyalgia (12). The diagnosis of psoriasis was made on history and physical examination in the vast majority of cases and skin biopsy if needed to rule out other conditions like Seborrheic dermatitis, lichen simplex chronicus, and atopic dermatitis (eczema) that mimic psoriasis and may present with thick demarcated plaques. An expanded physical examination was performed with attention to subtle findings in the scalp, umbilicus, intergluteal cleft, and nails by an expert dermatologist (22). The psoriatic types included in the study were plaque, pustular, arthropathic, and gutate type.

A blood sample was obtained from individuals of both groups and were investigated for full blood count (FBC), erythrocyte sedimentation rate (ESR), C. reactive protein (CRP), thyroid function tests (TSH, T3, T4), calcium and alkaline phosphatase, and antinuclear antibody (ANA) to rule out other diseases mimicking FMS and/or accompanying it as anemia, systemic lupus erythematosus, hypothyroidism, hyperparathyroidism, osteomalacia, and inflammatory and neoplastic diseases.

Results:

One hundred and twenty Iraqi patients with psoriasis (57 females and 63 males, mean age = 38.3 ± 14.88 years), and 120 healthy individuals (57 females and 63 males, mean age = 38.5 ± 14.46 years) were included in the study. The age and sex of patients and controls were shown in table (1), there was no significant difference between the two groups (P. value=0.923 and 1.000 respectively).

Fibromyalgia Syndrome was present in 32 (26.7%) psoriatic patients and absent in 88 (73.3%) of them compared to 13 (10.8%) and absent in 107 (89.2%) of control group (P. value=0.0016) thus showing statistically significant association as shown in table (1).

The distribution of FMS features in patients and controls are shown in table 2. Fatigue, the most common feature, was reported in 59 (49.2%) in psoriatic patients and 37 (30.3%) controls (P. value=0.0037).

Anxiety was present in 42 (35%) psoriatic patients and 12 (10%) controls (P. value=0.0000037). Sleep disturbance was noted in 36 (30%) psoriatic patients and 14 (11.7%) controls with P. Value=0.0047. Depression was noted in 16 (13.3%) psoriatic patients and 2 (1.6 %) controls (P. value=0.00061). Headache was present in 29 (24.2%) psoriatic patients and 20 (16.7%) controls (P. value= 0.149), numbness was present in 17 (14.2%) patients and 21 (17.5%) controls (P. value=0.470), irritable bowel was noted in 15 (12.5%) psoriatic patients and 21 (17.5%) controls (P. value =0.366).

Table (3) shows that the FMS was more frequent among patients with psoriatic arthropathy 17 (14.2%) than in plaque psoriasis 15 (12.5%) and it was absent in both pustular and

guttate types (0%) with P. value = 0.001, which was statistically significant.

Fibromyalgia syndrome was present more frequently among patients on systemic therapy 20 (16.7%) compared to topical 7 (5.8 %), light therapy 5 (4.2%), with P. value = 0.0001 which was statistically significant.

Other parameters: age, sex, disease duration, body mass index, waist circumference, extent and educational level all are not statistical predictors of fibromyalgia in Iraqi patients with psoriasis (table 4).

Table 1: Demographic characteristics and distribution of fibromyalgia of 120 patients with psoriasis and 120 individuals without psoriasis (controls).

	Psoriatic patients	Controls	
Characteristics	N = 120 (100%)	N = 120 (100%)	P
Age (year), M $\pm$ SD	38.3 $\pm$ 14.88	38.5 $\pm$ 14.46	0.923
Sex			
Male, n(%)	63 (52.5)	63 (52.5)	1.000
Female, n(%)	57 (47.5)	57 (47.5)	
Fibromyalgia Syndrome			
Present	32 (26.7)	13 (10.8)	0.0016
Absent	88 (73.3)	107 (89.2)	
N; number, P; P value, %; percent, M; mean, SD; standard deviation.			

Table 2: Distribution of Fibromyalgia Features in 120 psoriatic patients and 120 Controls.

	Psoriatic patients	Controls	
Features	N = (%)	N = (%)	P
Fatigue	59 (49.2%)	37 (30.8%)	0.0037
Anxiety	42 (35%)	12 (10%)	0.0000037
Sleep disturbance	36 (30%)	14 (11.7%)	0.0047
Headache	29 (24.2%)	20 (16.7%)	0.149
Numbness	17 (14.2%)	21 (17.5%)	0.470
Depression	16 (13.3%)	2 (1.6%)	0.00061
Irritable bowel	15 (12.5%)	21 (17.5%)	0.366
N; number, P; P value, %; percent.			

Table 3: Relationship between characteristic features of 120 patients with psoriasis and presence of Fibromyalgia Syndrome.

	FMS	No FMS	Total	
Variables	N= 32(26.7%)	N= 88(73.3%)	N=120(100%)	P
Duration of psoriasis (year), M ± SD	9.3 ± 7.3	11.9 ± 9.8	11.2 ± 9.3	0.174
Types of psoriasis, n(%)				
Plaque	15 (12.5)	68 (56.7)	83 (69.2)	0.001*
Pustular	0 (0.0)	1 (0.8)	1 (0.8)	
arthropathic	17 (14.2)	15 (12.5)	32 (26.7)	
Guttate	0 (0.0)	4 (3.3)	4 (3.3)	
Extent, n (%)				
>20%	12 (10.0)	26 (21.7)	38 (31.7)	0.544
<20%	20 (16.7)	62 (51.6)	82 (68.3)	
Drug History, n(%)				
Systemic therapy	20 (16.7)	22 (18.3)	42 (35.0)	0.0001
Topical therapy	7 (5.8)	17 (14.2)	24 (20.0)	
Light therapy	5 (4.2)	49 (40.8)	54 (45.0)	

N;number, P;P value, %;percent, M;mean, SD;standard deviation ,cm; centimeter , kg ;kilogram ,FMS;Fibromyalgia

*after combining Guttate with arthropathic and combining pustular with plaque.

Table 4: Relationship between demographic and anthropologic features of 120 patients with psoriasis and the presence of fibromyalgia syndrome

	FMS	No FMS	Total	
Variables	N= 32(26.7%)	N= 88(73.3%)	N=120(100%)	P
Age (year), M ± SD	38.4 ± 12.6	38.2 ± 15.7	38.3 ± 14.9	0.948
Male ,n (%)	14 (11.7)	49 (40.8)	63 (52.5)	0.247
Female, n (%)	18 (15)	39 (32.5)	57 (47.5)	
Body mass index (kg/m ²),M ± SD	27.9±6.2	27.6 ±6.2	27.7±6.2	0.815
Waist circumference (cm) , M ± SD	96.5±15.5	94.4±17.6	94.9±16.9	0.552
Educational Level, n(%)				
Not Educated	8 (6.7)	14 (11.6)	22 (18.3)	0.295
Primary	3 (2.5)	19 (15.8)	22 (18.3)	
Secondary	10 (8.3)	32 (26.7)	42 (35.0)	
Diploma & Collage	11 (9.2)	23 (19.2)	34 (28.4)	

N;number, P;P value, %;percent, M;mean, SD;standard deviation ,cm; centimeter , kg ;kilogram ,FMS;Fibromyalgia

Discussion:

To the best of our knowledge this is the first case control study to evaluate the prevalence of fibromyalgia among Iraqi patients with psoriasis. The study revealed a significant association between psoriasis and development of Fibromyalgia Syndrome, the prevalence was 26.7% in the sample studied compared to 10.8% of healthy individuals (P. value =0.0016). Thune followed 1269 Norwegian patients with psoriasis for 3 years and found that 42% of them suffered from Fibromyalgia Syndrome (23). The higher percentage can be explained by the larger study sample, different study design and/or different population where the patients with musculoskeletal symptoms were categorized into two groups. Group I included all patients who fulfilled the ACR-90 criteria for FM with at least 11 positive tender points out of 18 possible and chronic widespread pain, while group 2 included patients with musculoskeletal pain but not meeting the diagnostic criteria of FM. We found that our result of association has lower rate than that detected in Iraqi

patients with Behcet's disease which was 58.9% (24,25). The significant association between psoriatic arthritis and FMS revealed in this study can explain the physical disability and the stressful effect of the disease on the patients (24,26). We found chemotherapy have a higher rate of association than other types of treatment which can be explained by presence of immune disorder. It had been found that treatment with chemotherapy could be correlated with features of myalgia and arthralgia of hands, feet and ankles (2,22,27). Considering the FMS symptoms, we detected that fatigue, depression and anxiety have a significant association with psoriasis, the result regarding fatigue agree with the result of Husted J A et al study which revealed an association of 35% (28). Depression and anxiety have results in agreement with Zaher H A et al study which revealed 21%, 27% of association respectively (24). From the above information and because there is no specific single treatment for FMS, so the management and prevention of FMS in psoriatic patients can be based on multifaceted

program which includes education, stress management and psychological evaluation to overcome this symptoms and improve quality of life (2,24,26,28).

Conclusion:

There is a significant association between Fibromyalgia Syndrome and Psoriasis.

Author's contributions

Dr. Khudir Z. Al-Bidri: Study conception, design and supervision, establishing the diagnosis of fibromyalgia and psoriatic arthritis, critical revision.

Dr. Hussam Ali Salman: Establishing the diagnosis of psoriasis, data acquisition.

Dr. Youssa Al-Hassan: Study conception and design, data collection, analysis and interpretation, drafting the manuscript.

Dr. Mohammed Sahib Hasan: Drafting the manuscript, critical revision.

References:

1. Stisi S, Venditti C, Sarracco I. Distress influence in fibromyalgia. *Reumatismo* 2008; 60(4):274-81.
2. Dina D, Daniel J. Musculoskeletal signs & symptoms in: Klippel J H, Stone J H, Crofford L J, White PH, eds. *Primer on the Rheumatic Diseases*, 13rd Edition, New York, USA: Springer Science and Business media, 2008; 88-91.
3. Doherty M, Lanyon P, Ralston S H. Musculoskeletal diseases. In: Niki R, Brian R, Stuart H, eds. *Davidson Principle and Practice of Medicine* 21st Edition, Churchill Livingstone, 2010; 1105-1107.
4. Chakrabarty S, Zoorob R. Fibromyalgia. *Am Fam Physician*. 2007 Jul 15;76(2):247-54. [abstract]
5. Al-Rawi ZS, Kamil AH. Prevalence of fibromyalgia among school children and adolescents in Iraq. *Arthritis Rheum*. 2000; 435: 212.
6. Malyak M. Fibromyalgia. In: West SG (eds). *Rheumatology Secrets* 2nd Edition. Philadelphia. Hanley and Bolfus. Inc. 1997; 354-63.
7. Arnold LM, Hudson JI, Hess EV, et al. Family Study of FMS. *Arthritis Rheum* 2004;50:944-57.
8. Julien N, Goffaux P, Arseneault P, et al. Widespread Pain in FMS is related to deficit of endogenous pain inhibitor. *Pain* 2005;14:295-302.
9. Grofford JI. Neuroendocrine abnormalities in FMS and related disorder. *Am J Med Sci* 1998;315:359-66.
10. Henriksson KG. Fibromyalgia from Syndrome to Disease. Overview of Pathogenetic Mechanisms. *J Rehabil Med* 2003; (41 S):89-94.
11. Staud R, Cannon RC, Mauderli AP, et al. Temporal summation of pain from mechanical stimulation of muscle tissue in normal controls and subjects with Fibromyalgia Syndrome. *Pain J* 2003(102 S):87-95.
12. Wolf F, Smythe HA, Yunus MB, 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.
13. Anne M, William S, Fenghe DU, et al. Insights in to Psoriasis and other inflammatory diseases from large scale gene expression studies. *Hum Mol Genet* 2001;17: 1793-1805.
14. Schofield OMY, Rees JL. Skin Disease In: Boon NA, College NR, Walker BR, Hunter JA.A. eds. *Davidson Principle and Practice of Medicine* 21st Edition, Churchill Livingstone, 2010; 1260-64.
15. Gerald K, Charles N. Psoriasis – recent advances in understanding its Pathogenesis and Treatment. *J Acad Dermatol* 2005; 53:94-100.
16. Ghu K, Devlukia S, Charlton R et al. Psoriasis. *Immvit* 2008; 7:481-486.
17. Gudjesson JE, Elder JT. Psoriasis Epidemiology. *Clinic Dermatology* 2007; 25:535-46.
18. Griffiths CE, Barker J. Pathogenesis and Clinical features of Psoriasis. *Lancet* 2007; 370:263-71.
19. Peak R, Strike H, Clinch J, et al. Psoriasis after treatment of Juvenile Idiopathic Arthritis with Etanercept. *Ann Rheumatic Disease* 2005; 64: ii18-ii23.
20. Tavlör G, Burns DA, Wiselka MJ. Extensive Psoriasis induce by Interferon Alfa treatment for Chronic Hepatitis C. *Post grad med J* 2000; 76: 365-67.
21. Smith CH, Barker JN. Psoriasis and It management. *British Medical Journal* 2006; 333:380-84.
22. Gelfand JM, Stern RS, Nijsten T, et al. The prevalence of psoriasis in African Americans: results from a population-based study. *J Am Acad Dermatol* 2005; 52:23. Thun O. The Prevalence of Fibromyalgia among patients with Psoriasis. *Acta Derma Venereal* 2005; 85: 33-37.
23. Zaher HA, Amin ME, Rakhawy MY. Coping with Depression and Anxiety in Patient with Psoriasis. *Egypt Journal Psychiatry* 2010; 31:57-63.
24. Al izzi MK, Jabber AS. Fibromyalgia in Iraqi patients with Behcet's Disease. *J Med Liban* 2004; 52:86-90.
25. Bhosle MJ, Kulkarni A, Feldman SR, et al. Quality of life in Patients with Psoriasis. *Health and Quality of life Outcome* 2006; 4:35-41.
26. Fam AG. Hematologic and Malignant Disorder IN: Klippel J H, Stone J H, Crofford LJ, White PH, eds. *Primer on the Rheumatic Diseases*, 13th, New York, USA: Springer Science and Business media, 2008; 224-8.
27. Husted JA, Tom BD, Foreweld VT, et al. Occurrence and Correlate of Fatigue in Psoriatic Arthritis. *Ann Rheumatic Diseases* 2009; 68:1553-58.
28. Reus VI. Mental Disorders. IN: Braunwald E, Fauci AS, Kasper DL, Hauser SL, eds. *Harrison's Principles of Internal Medicine* 15th Edition, New Yourk, McGraw-Hill 2000; 2542-57.
29. Blaney GP, Albert PJ, Proal AD. Vitamin D Metabolites as clinical Markers in Autoimmune and Chronic disease. *Ann Ny Acadsci* 2009; 1173: 39-94.
30. Wynne G, Macforlane G J, Silman A J, et al. Physical Trauma lead to an increase in the risk of new onset widespread pain. *Ann Rheumatic Disease* 2006; 65:391-93.