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Evaluation of psoriasis patients with a rheumatologic questionnaire efficiently aids in early detection of psoriatic arthritis

Psoriazisli hastalarda romatolojik anket ile değerlendirilme erken psoriatik artrit tanısı saptanmasına verimli biçimde yardımcı olur

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Abstract

Background and Design: Psoriatic arthritis (PsA), enthesitis and/or soft tissue swelling accompany psoriasis in 6-30% of all psoriatic patients. Early recognition of PsA is crucial since it is a serious disabling comorbidity with irreversible complications.
Materials and Methods: Patients, who were admitted to the outpatient clinic of Hacettepe University Faculty of Medicine Department of Dermatology between March 2014 and 2015 with plaque psoriasis lacking any prior PsA diagnosis, were enrolled for this study. Demographic data, previous treatment history, laboratory parameters and physical examination of the patients were collected. All patients were examined by the same physician with a rheumatologic questionnaire that consists of five questions about any accompanying rheumatologic complaints. All patients who had at least one positive answer were consulted with the department of rheumatology at the same center.
Results: Two hundred and twenty-three patients were included, 58% (n=129) were male and 42% (n=94) were female. The mean age of the patients was 43.46±14.31 years. The mean Psoriasis Area and Severity Index score was 12.66±9.89 standard deviation. The most common complaint detected by the questionnaire was myalgia/arthralgia at rest in 28% (n=62) of the patients. 30% (n=69) of the patients were consulted to rheumatology for a positive answer on the questionnaire and 24% (n=53) of the patients were evaluated by a rheumatologist. 51% (n=27) of the evaluated patients were diagnosed with a rheumatologic disease which were PsA in 40% (n=21), sacroiliitis in 6% (n=3), ankylosing spondylitis in 4% (n=2), and unspecified connective tissue disease in one patient.
Conclusion: The improvement of dermatologist's skills about suspecting, questioning and examining PsA symptoms is crucial for early diagnosis. This study concludes that a standard rheumatologic questionnaire efficiently helps dermatologists to predict PsA in psoriatic patients.
Keywords: Psoriasis, psoriatic arthritis, questionnaire

Öz

Amaç: Psoriatik artrit (PsA), entezit ve/veya yumuşak doku şişliği tüm psoriazisli hastaların yaklaşık %6-30'unda birlikte görülmektedir. Geri dönüşü olmayan komplikasyonlar ile giden sakatlayıcı ciddi bir komorbidite olması nedeniyle PsA'nın erken tanısı önemlidir.
Gereç ve Yöntem: Mart 2014-Mart 2015 tarihleri arasında Hacettepe Üniversitesi Tıp Fakültesi, Dermatoloji Anabilim Dalı'na başvuran öncesinde PsA tanısı olmayan plak psoriazisli hastalar çalışmaya dahil edildi. Demografik bilgiler, daha önce alınan tedaviler, laboratuvar parametreler ve muayene bulguları toplandı. Tüm hastalara aynı hekim tarafından eşlik edebilecek romatolojik şikayetler ile ilgili hazırlanmış beş sorudan oluşan romatolojik anket uygulandı. En az bir soruya pozitif yanıt veren hastalar aynı merkezin romatoloji bölümüne konsülte edilerek değerlendirildi.
Bulgular: İki yüz yirmi üç hasta çalışmaya dahil edildi, %58'i (n=129) erkek ve %42'si (n=94) kadındı. Hastaların ortalama yaşı 43,46±14,31 yıldı. Ortalama Psoriazis Alan ve Şiddet İndeks skoru 12,66±9,89 idi. Ankette en sık saptanan şikayet istirahatte miyalji/artralji varlığı olarak hastaların %28'inde (n=62) saptandı. Hastalardan ankette en az bir pozitif yanıtı olan %30'u (n=69) romatoloji bölümüne konsülte edildi, bu hastaların %24'ü (n=53) romatoloji tarafından değerlendirildi. Bu hastaların %40'ında (n=21) PsA, %6'sında (n=3) sakroiliit, %4'ünde (n=2) ankilozan spondilit ve bir hastada tanımlanamayan bağ doku hastalığı olmak üzere hastaların %51'i (n=27) hasta romatolojik hastalık tanısı aldı
Sonuç: Dermatoloji hekimlerinin PsA semptomlarından şüphelenme, bu belirtileri sorgulama ve muayene yetilerinin geliştirilmesi erken tanının sağlanabilmesi için önemlidir. Bu çalışmada psoriazisli hastalarda standart bir romatolojik anket uygulaması ile verimli biçimde PsA tanısının tahmin edilebileceği sonucuna varılmıştır.
Anahtar Kelimeler: Psoriazis, psoriatik artrit, anket

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Introduction

Psoriasis is a chronic inflammatory skin disease that affects 2-4% of different ethnic populations[1]. Psoriatic arthritis (PsA) may accompany psoriasis in approximately 6-30% of all psoriatic patients leading to progressive damage, loss of function and serious disability[2]. In the majority, PsA develops after cutaneous disease within five to ten years. In fact, it is reported that diagnostic delay in PsA can be as long as twelve years[3]. As a result, dermatologists have an important role in early referral of psoriatic patients with probable PsA[4]. Different questionnaires such as the Psoriatic Arthritis Screening and Evaluation (PASE), Toronto Psoriatic Arthritis Screen (ToPAS), and the Psoriasis Epidemiology Screening Tool (PEST) are developed to help dermatologists and general practitioners identify PsA[5-7]. However, these tools are not routinely used in clinical practice due to their time-consuming features and requirements for further rheumatologic examination skills. Therefore, the aim of this study was to evaluate the diagnostic availability of a rheumatologic questionnaire added to routine medical history of psoriasis patients for detection of PsA as early as possible.

Materials and Methods

For this study approval from Ethical Committee of Hacettepe University Local Ethical committee for non-interventional studies has been taken (Protocol number: GO16/46-16).

Patients older than 18 years of age who were admitted to Hacettepe University Faculty of Medicine Department of Dermatology between March 2014 and 2015 with plaque psoriasis lacking any prior PsA diagnosis were enrolled for this study. Demographic data, including gender, age, onset of disease, disease duration, Psoriasis Area and Severity Index score, previous treatment history, laboratory parameters including total blood count and C-reactive protein levels were recorded. All patients were examined by the same dermatologist and all patients were evaluated with a rheumatologic questionnaire that consists of five questions about any accompanying rheumatologic complaints (Table 1). All patients who had at least one positive answer were consulted with the department of rheumatology at the same center. Rheumatology consulted patients were evaluated according to the Classification of Psoriatic Arthritis criteria (CASPAR). Additional laboratory and radiological studies were warranted when required.

Statistical analysis was performed using the SPSS version 22.1.1. Chi-square test and the Mann-Whitney U test were used for categorical and numeric variables, respectively. A p value of less than 0.05 was considered statistically significant.

Results

The total number of psoriatic patients enrolled for the study was 223; 58% (n=129) were male and 42% (n=94) were female. Demographic and clinical characteristic of the patients are shown in Table 2.

The answers of patients to the questionnaire are shown in Table 3. The most common complaint detected by the questionnaire was the presence of myalgia and/or arthralgia at rest in 28% (n=62) of the patients. 30% (n=69) of the patients were consulted to the department of rheumatology for the presence of at least one positive answer on the questionnaire and 24% (n=53) of the patients were evaluated rheumatologically. 51% (n=27) of the evaluated patients were diagnosed with a rheumatologic disease. 40% (n=21) of the evaluated patients were diagnosed with PsA. Spinal involvement such as sacroileitis was diagnosed in 4% (n=2) and ankylosing spondylitis was diagnosed in 6% (n=3) of the patients. One of the patients was diagnosed with unspecified connective tissue disease.

Reported axial complaints were more common in patients who were receiving topical therapy alone compared to patients receiving systemic therapies (p=0.004) (Table 4).

Mean platelet volume (MPV), red cell distribution width (RDW) values and C-reactive protein (CRP) levels of patients were 8.59±0.98 standard deviation (SD) (n=181), 13.9±1.4 SD (n=181) and 0.52±0.38 SD (n=161), respectively. RDW values and CRP levels in patients with and without rheumatologic complaints did not show any significant

Table 1. Demographic and clinical characteristics of psoriasis patients

Number of patients	**n=223**
Gender (%, number of patients)	
-Male	57.8% (n=129)
-Female	42.2% (n=94)
Median age (yrs ± SD)	43.46±14.31
Mean disease duration (yrs ± SD)	14.92±11.87
Mean PASI (score ± SD)	12.66±9.89
Treatments (n=190)	
Biological agent*	64
Biological agent + methotrexate	10
Methotrexate	17
Cyclosporine	5
Acitretin	8
Phototherapy	8
Topical treatment	78

*Infliximab, etanercept, adalimumab, ustekinumab; PASI: Psoriasis Area and Severity Index, yrs: Years, SD: Standard deviation

Table 2. Positive response rates of rheumatologic questionnaire in psoriasis patients

Questions	**Positive response**	
	(%)	n
1. Do you ever have arthralgia and/or myalgia at the rest?	28.1	62
2. Do you ever have night awakening low back and/or neck pain?	24	53
3. Do you ever have tenderness, pain and swelling in your hand and foot joints?	23.1	51
4. Do you ever experience stiffness in your joints for more than 20 minutes in the mornings?	23.1	51
5. Do you ever have pain stepping on your heels in the mornings?	13.1	29

difference (p>0.05 for all). However, patients who reported to have small joint pain had significantly higher MPV values than those who reported no pain (p=0.05) (Table 5).

There was no statistically significant relationship of newly diagnosed rheumatologic diseases with gender, age of psoriasis onset, nail involvement, and received treatments (p>0.05 for all)

Discussion

PsA is an important comorbidity of psoriasis often preceded by cutaneous lesions. The prevalence of PsA in a psoriasis population may vary due to the diagnostic criteria used by the rheumatologist. The prevalence of PsA has been reported as high as 30% in certain populations. In this study, an incidence rate of 12.1% was found in plaque psoriasis patients who do not have any previous diagnosis of PsA. Therefore, screening for PsA is crucial and should be considered mandatory for psoriasis patients in dermatology clinics.

Different questionnaires such as PASE, ToPAS and Psoriasis Epidemiology Screening Tool were developed to help dermatologists and general practitioners identify suspected PsA for referral to rheumatologists[5-7]. However, these tools are not routinely used in clinical practice due to their time-consuming features and requirements for further rheumatologic examination skills. The PASE questionnaire consists of two parts: A symptom subscale and a function subscale containing questions about current status rather than ever having joint symptoms. It was developed for dermatologists to identify psoriasis patients with PsA. The ToPAS questionnaire has a broad setting including dermatologic evaluation which is unnecessary for an already dermatologically examined psoriatic patient. In this questionnaire, one third of the questions is about skin and nail symptoms of psoriasis[8]. This questionnaire has claimed its power in indicating PsA; in a prospective cross-sectional study by Reich et al.[9], 63% of patients with suspected rheumatologic involvement were diagnosed with PsA as they had positive criteria for possible joint involvement. In another cross-sectional study, 48% of the suspected patients were diagnosed with PsA which were evaluated by the questions prepared by the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis[10]. In another study, Yang et al.[11] evaluated patients with a list of questions; the patients were then diagnosed by a dermatologist using the CASPAR criteria and the dermatologist-made diagnoses were reviewed by a rheumatologist.

Table 3. Distribution of diagnoses in rheumatology consulted psoriasis patients

Rheumatologic diagnosis	(%, number of patients)
Psoriatic arthritis	40 (n=21)
Sacroiliitis	6 (n=3)
Ankylosing spondylitis	4 (n=2)
Unspecified connective tissue disease	1.8 (n=1)

Table 4. Distribution of treatments in psoriasis patients with positive responses

Treatments	Pain at rest	Axial complaint	Small joint complaint	Morning stiffness	Enthesis complaint
All treatments (n=190)	27.4% (n=52)	23.2% (n=44)	23.7% (n=45)	22.6 % (n=43)	13.2% (n=25)
Biologics (n=64)	34.6% (n=18)	27.3% (n=12)	31.1% (n=14)	25.6% (n=11)	28% (n=7)
Biologic + Mtx (n=10)	3.8% (n=2)	6.8% (n=3)	2.2% (n=1)	4.7% (n=2)	4% (n=1)
Mtx (n=17)	11.3% (n=6)	9.1% (n=4)	17.8% (n=8)	9.3% (n=4)	8% (n=2)
Others Cyclosporine/Acitretin/ Phototherapy (n=21)	9.6% (n=5)	0.0% (n=0)	11.1% (n=5)	9.3% (n=4)	20% (n=5)
Topicals (n=78)	40.4% (n=21)	56.8% (n=25)	37.8% (n=17)	51.2% (n=22)	40% (n=10)
P value	0.915	0.004	0.205	0.613	0.705

Mtx: Methotrexate

Table 5. Distribution of laboratory parameters and responses of rheumatologic questionnaire in psoriasis patients

Laboratory parameters	Morning stiffness		Pain at rest		Small joint complaint		Enthesis complaint		Axial complaint	
	Yes (n=51)	No (n=172)	Yes (n=62)	No (n=161)	Yes (n=51)	No (n=172)	Yes (n=29)	No (n=194)	Yes (n=53)	No (n=170)
CRP (mg/dL) (n=160)	0.35	0.40	0.42	0.37	0.44	0.37	0.35	0.41	0.35	0.41
P value	0.862		0.602		0.503		0.322		0.836	
RDW (%) (n=180)	13.7	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
P value	0.175		0.321		0.32		0.434		0.704	
MPV (fL) (n=180)	8.5	8.6	8.5	8.5	8.7	8.5	8.5	8.5	8.5	8.5
P value	0.864		0.876		0.05		0.682		0.942	

CRP: C-reactive protein, RDW: Red cell distribution width, MPV: Mean platelet volume

In this study, the diagnosis of PsA could be established in 40% of suspected patients.

In accordance with previous data from the literature, 51% of PsA suspected patients were confirmed to have rheumatologic involvement in our study. Standardized questionnaires designed for different populations of psoriasis patients can help dermatologists detect PsA even without rheumatologic examination. Further evaluation of our questionnaire with a scoring system may enable to predict cut-off points for rheumatologic complaints to claim PsA more evidently.

Study limitatitons

The fact that the questions included in our questionnaire were not created using a method that includes the ideas of other researchers, such as the Delphi method, can be shown among the limitations of our study. However, we think that all five questions which are considered to be important in our routine examination for questioning psoriasis patients who are followed jointly by dermatology and rheumatology units at our center efficiently covers all PsA types and symptoms (arthritis, enthesitis, dactylitis).

Another limitation of our study is although our questionnaire is quite useful in predicting PsA in patients who had positive answers in our questionnaire and patients who did not have a positive response were not evaluated by rheumatologic examination and therefore the specificity of the questionnaire could not be calculated.

Conclusion

In conclusion, this novel tool is practical to perform, easy to understand and answer by the patient and seems sensitive enough to make the appropriate referral of the suspected patient for rheumatologic evaluation.

Ethics

Ethical Committee Approval: For this study approval from Ethical Committee of Hacettepe University Local Ethical committee for non-interventional studies has been taken (protocol number: G016146-16).
Informed Consent: A consent form was completed by all participants.
Peer-review: Externally and Internally peer-reviewed.

Authorship

Patient Follow Up and Clinical Practices: S.D., N.A., S.K.Y., U.K., A.E., Concept: S.D., Design: S.D., Data extraction and application: S.D., S.K.Y., Analysis and interpretation: S.D., S.K.Y., U.K., Literature serach: S.D., S.K.Y., Writer: S.D., N.A., S.K.Y., U.K.

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