

Psoriasis and comorbidities: general practitioners' awareness

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Abstract

Introduction: Systemic inflammatory diseases such as psoriasis, systemic lupus erythematosus (SLE), and rheumatoid arthritis (RA) are associated with an increased prevalence of cardiovascular diseases (CVD) and other comorbidities. The primary aim of this study was to assess the screening practices of general practitioners (GPs) with regard to the most frequent comorbidities in patients with psoriasis.

Methods: We adapted, with permission, a questionnaire that was used by Parsi et al. in 2012, which was then distributed to GP residents and consultants.

Results: Overall, 372 questionnaires were collected. Significantly more physicians screen for CV risk factors in patients with RA and SLE than in patients with psoriasis. There was no statistically significant difference between GP residents in the initial and final phase of residency, or between GP residents and consultants regarding awareness of increased prevalence of CVD in psoriasis or comorbidity screening practices in psoriasis patients.

Conclusion: Most GP residents and consultants that participated in this study are not aware of an increased CV risk in patients with psoriasis and assign greater importance regarding this risk to other inflammatory diseases such as RA and SLE.

Keywords: psoriasis, dermatology education, general practitioners

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Introduction

Psoriasis is an immune-mediated disease with a genetic basis (1). Systemic inflammatory diseases such as psoriasis, systemic lupus erythematosus (SLE), and rheumatoid arthritis (RA) are associated with an increased prevalence of cardiovascular diseases (CVD) and other comorbidities (2). In the last decade, screening guidelines for cardiovascular (CV) risk factors in patients with psoriasis have been published; however, it is uncertain whether they are actually applied in clinical practice (3).

The primary aim of this study was to assess the screening practices and awareness among general practitioner (GP) residents and consultants regarding the most frequent comorbidities in patients with psoriasis and to compare this with other known systemic inflammatory diseases; namely, RA and SLE.

Methods

We adapted, with permission, the questionnaire used by Parsi et al. (3) in 2012, which was distributed to all GP residents and consultants that attended two dermatology meetings dedicated to GPs in December 2015 and April 2016. The questionnaire identified the various comorbidity screening practices in patients with psoriasis and other systemic inflammatory disease, including SLE and RA.

Statistical analysis

In Portugal GP residents must perform a 4-year residency in order to become consultants. For the results analysis, the participants were divided into three groups: GP residents in the first 2 years of residency, GP residents in the last 2 years of residency, and GP consultants.

All statistical analyses were performed using SPSS version 20.0

(IBM, Armonk, NY). Categorical variables were compared using McNemar's test, Fisher's exact test, or a chi-square test. We considered the significance level to be $p < 0.05$.

Results

Overall, 372 questionnaires were collected; 283 (76.1%) participants were women and 299 (80.4%) were under 30 years old (Table 1).

GP trainees in the first 2 years of residency were the largest group, with 271 (72.8%) residents; GP residents in the last 2 years of residency group numbered 79 (21.2%) participants; and the group of GP consultants numbered 16 (4.3%; Table 1).

Psoriasis was perceived as a systemic disease by the majority of physicians (328/372; 88.2%). A significantly greater number recognized SLE (366/372; 98.4%, $p < 0.001$) and RA (359/372; 96.5%, $p < 0.001$) as systemic diseases (Table 2).

An increased mortality risk in psoriasis patients was recognized by 149/372 (40.1%) physicians. A significantly greater number recognized SLE (339/372; 91.1%, $p < 0.001$) and RA (288/372, 77.4%, $p < 0.001$) as having increased mortality (Table 2).

Physicians were almost twice as likely to be aware of the increased CV risk in patients with RA than in those with psoriasis (72.3% vs. 36.3%, $p < 0.001$) and 2.5 times more likely in SLE patients than in those with psoriasis (92.7% vs. 36.3%, $p < 0.001$) (Table 2).

There were no statistically significant differences between the three groups studied concerning the recognition of psoriasis as a systemic disease or as having an increased CV risk ($p > 0.05$; Table 3). A higher number of GP residents in the final stage of residency identified psoriasis as having increased mortality compared to GP residents in the early stage of residency, and this difference was statistically significant (50.6% vs. 37.3%, $p = 0.019$). However, this difference was not statistically significant when the GP residents were compared with GP consultants.

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The number of patients seen per month, their sex, and their age did not affect the recognition of psoriasis as a systemic disease or as having an increased mortality and CV risk ($p > 0.05$).

Concerning the screening practices of CV risk factors in patients with psoriasis, 180 (48.4%) of participants usually screen for hypertension (HT), 134 (36.0%) for obesity, 138 (37.1%) for diabetes mellitus (DM), and 129 (34.7%) for dyslipidemia. Significantly more physicians usually screen for CV risk factors in patients with SLE than in those with psoriasis; namely HT (73.9% vs. 48.4%, $p < 0.001$), obesity (41.9% vs. 36%, $p < 0.001$), DM (53.2% vs. 37.1%, $p < 0.001$), and dyslipidemia (53.2% vs. 34.7%, $p < 0.001$; Table 2). Similarly, a significantly higher number of physicians usually screen these risk factors in patients with RA than in those with psoriasis, particularly HT (69.6% vs. 48.4%, $p < 0.001$), obesity (48.1% vs. 36%, $p < 0.001$), DM (51.6% vs. 37.1%, $p < 0.001$), and dyslipidemia (47.9% vs. 34.7%, $p < 0.001$), Table 2. Hypertension was the most frequently screened risk factor in all diseases.

There were no statistically significant differences regarding the screening of arthritis in patients with psoriasis and those with SLE (62.6% vs. 68.3%, $p > 0.05$) or RA (62.6% vs. 67.2%, $p > 0.05$) (Table 2).

Only 167 (44.9%) physicians stated that they systematically screen for depression in psoriasis patients. Significantly more usually screen for depression in patients with SLE (55.9% vs. 44.9%, $p < 0.001$) and those with RA (54.8% vs. 44.9%, $p < 0.001$) than in those with psoriasis (Table 2).

There were no statistically significant differences between GP residents in the initial and final stage of residency, or between GP residents and consultants with respect to CV risk factor screening practices in psoriasis patients (Table 3).

Discussion

In recent decades, there has been a growing awareness of an as-

Table 1 | Characteristics of the study participants (n = 372).

	Total participants n (%)	Residents, 1 st and 2 nd years n (%)	Residents, 3 rd and 4 th years n (%)	Consultants n (%)
Year of GP residency				
1 st	187 (50.3)	187 (50.3)		
2 nd	84 (22.6)	84 (22.6)		
3 rd	58 (15.6)		58 (15.6)	
4 th	21 (5.6)		21 (5.6)	
GP consultants	16 (4.3)			16 (4.3)
Not stated	6 (1.6)			
Sex				
Female	283 (76.1)	207 (76.4)	61 (77.2)	12 (75.0)
Male	86 (23.1)	62 (22.9)	18 (22.8)	3 (18.8)
Not stated	3 (0.8)	2 (0.7)	0	1 (6.2)
Age (years)				
< 30	299 (80.4)	243 (89.7)	52 (65.8)	0
30–35	51 (13.7)	21 (7.7)	26 (32.9)	2 (12.6)
35–40	5 (1.3)	3 (1.1)	1 (1.3)	1 (6.2)
> 40	13 (3.5)	1 (0.4)	0	12 (75.0)
Not stated	4 (1.1)	3 (1.1)	0	1 (6.2)

GP = general practitioners.

Table 2 | Analysis of screening practices by disease group.

	Psoriasis n (%)	SLE n (%)	RA n (%)	p^a psoriasis vs. SLE	p^a psoriasis vs. RA
Systemic disease?	328 (88.2)	366 (98.4)	359 (96.5)	< 0.001	< 0.001
Increased mortality?	149 (40.1)	339 (91.1)	288 (77.4)	< 0.001	< 0.001
Increased CV risk?	135 (36.3)	345 (92.7)	269 (72.3)	< 0.001	< 0.001
Screening practices					
Hypertension	180 (48.4)	275 (73.9)	259 (69.6)	< 0.001	< 0.001
Diabetes mellitus	138 (37.1)	198 (53.2)	192 (51.6)	< 0.001	< 0.001
Obesity	134 (36.0)	156 (41.9)	179 (48.1)	0.040	< 0.001
Dyslipidemia	129 (34.7)	198 (53.2)	178 (47.9)	< 0.001	< 0.001
Depression	167 (44.9)	208 (55.9)	204 (54.8)	< 0.001	< 0.001
Arthritis	233 (62.6)	254 (68.3)	250 (67.2)	0.088	0.160

SLE = systemic lupus erythematosus, RA = rheumatoid arthritis, CV = cardiovascular.

^a Categorical variables were compared using McNemar's test, Fisher's exact test, or a chi-square test.

Table 3 | Analysis of screening practices by study group.

Psoriasis	Residents, 1 st and 2 nd years n (%)	Residents, 3 rd and 4 th years n (%)	Consultants n (%)	p^a residents vs. residents	p^a residents vs. consultants
Systemic disease?	237 (87.5)	72 (91.1)	15 (93.8)	0.370	0.502
Increased mortality?	101 (37.3)	40 (50.6)	5 (31.3)	0.019	0.438
Increased CV risk?	95 (35.1)	30 (38.0)	7 (43.8)	0.469	0.554
Screening practices					
Hypertension	131 (48.3)	41 (51.9)	8 (50.0)	0.714	0.584
Diabetes mellitus	96 (35.4)	36 (45.6)	6 (37.5)	0.159	0.250
Obesity	95 (35.1)	32 (40.5)	7 (43.8)	0.507	0.299
Dyslipidemia	96 (35.4)	27 (34.2)	6 (37.5)	0.615	0.432
Depression	122 (45.0)	37 (46.8)	8 (50.0)	0.291	0.769
Arthritis	173 (63.8)	50 (63.3)	10 (62.5)	0.199	0.808

SLE = systemic lupus erythematosus; RA = rheumatoid arthritis; CV = cardiovascular.

^a Categorical variables were compared using McNemar's test, Fisher's exact test, or a chi-square test.

sociation between psoriasis and a variety of comorbidities, which include psoriatic arthritis, inflammatory bowel disease, depression, metabolic syndrome, nonalcoholic fatty liver disease, lymphoma, and erectile dysfunction (4–8). In fact, patients with psoriasis have an increased risk of CVD and CV mortality. Depression itself is also associated with an increased risk of CVD (5, 6).

The exact mechanism of the psoriasis-CVD association remains unclear, but it may involve humoral and cellular inflammatory mediators (7). Atherosclerosis exhibits many similarities to psoriasis and other chronic inflammatory diseases such as SLE and RA regarding the immune process, the humoral mediators profile, and the immune cells involved in the pathogenesis (4, 7). Taken together, these studies suggest that psoriasis itself may be an independent risk factor for developing CVD (5).

Recently a consensus group proposed an integrated approach to comorbidities in patients with psoriasis, including CV risk factors (4). They recommended that patients with mild psoriasis should be screened annually and those with severe psoriasis every 6 months. CV screening include recording weight, height, body mass index, waist circumference, blood pressure, total, LDL, and HDL cholesterol, triglycerides, fasting plasma glucose, and glycosylated hemoglobin evaluation. In addition, patients should be asked about tobacco and alcohol consumption and evaluated for signs and symptoms of arthritis, nonalcoholic fatty liver disease, inflammatory bowel disease, lymphoma, and depression (4).

The majority of GP trainees and specialists that participated in this study do not usually screen for HT, DM, dyslipidemia, obesity, and depression in psoriasis patients and are not aware of an increased CV risk and mortality in patients with psoriasis. Moreover, they assign greater importance regarding CV risk factors and

increased mortality to other inflammatory diseases; namely, RA and SLE.

Across residency, the screening practices did not change significantly, pointing to the fact that this knowledge is not acquired during the residency program. Furthermore, although most physicians usually screen for arthritis on psoriasis patients, more than one-third still do not.

This study found holes in the Portuguese GP residency program concerning psoriasis. Efforts are needed to improve GPs' awareness concerning comorbidities associated with psoriasis.

Limitations of the study include the potential for reporting bias, which is inherent to questionnaire-based methodology. Another limitation is related to the great imbalance between the different groups, which conditions the analysis, especially due to the small number of GP consultants.

Conclusion

Psoriasis is a systemic inflammatory disease. Because GPs are in a sentinel-like position to detect and respond to psoriasis patients' comorbidities, it is essential to alert GPs about the comorbidities in psoriasis patients and the relevance of CV risk factor screening in this population.

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