Psoriasis in Jordan: a single center experience

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ABSTRACT

Objectives: To evaluate the demographics, therapeutic protocols, risk factors and co-morbidities of psoriasis in one hospital in Jordan's public military health sector.

Methods: Our study included 350 adult patients, of both genders, aged 19 -75 years, diagnosed with psoriasis by dermatologists. The demographics, therapeutic protocols, risk factors and co-morbidities were assessed. Psoriasis was classified as severe, moderate, and mild forms depending on the psoriasis area severity index (PASI) score, which was used to assess the severity of psoriatic lesions based on area coverage and plaque appearance, a PASI <5 is a mild psoriasis, a PASI <10 is a moderate, and a PASI >10 is a severe psoriasis. We collected information on skin disorders and infections, chronic diseases, pregnancy, stress, obesity, smoking status and drug use (beta-blockers, ACE inhibitors, anti-malarial, NSAIDs, lithium, interferon's, tetracycline's and penicillin.). The study was approved by the ethics and research review board committee of the Royal Medical Services. The patients' information was used for the study during a period of 4 years from Jan 2012 to Jan 2016 at Prince Rashid Military Hospital, Irbid, Jordan.

Results: Psoriasis was more prevalent in men and most prevalent in the age group 68-75 years. The prevalence in both genders increased with increasing age. 94.9% of patients were treated with topical corticosteroids and 12.9 % of patients had systemic treatment. Psoriatic patients experienced increased co-morbidities of diabetes mellitus and hypercholesterolemia. Patients with previous skin disorders (OR, 3.1 [95% CI, 2.9-3.8]) and skin infection (OR, 1.7 [95% CI, 1.5-1.8]), during the last year, had the highest risk of having psoriasis. Other risk factors include Smoking, obesity, stress, depression and skin trauma.

Conclusion: The number of Jordanian psoriatic patients presenting to public health military sector hospitals is more in males than in females and the number increased markedly in patients aged 68-75 years.

Key words: Co-morbidities, Epidemiology, Jordan, Psoriasis.

Introduction

Genetic and environmental factors affect the pathogenesis of psoriasis. Geographic site, gender and age influence the epidemiology of psoriasis. Patient information can clarify risk factors for disease severity. Psoriasis is a chronic, immunological and inflammatory disease of the skin and joints, with systemic implications, which affects 1 - 3% of the world's population. [1] A Frequency rate of 60.4 per 100 000 person-years was recorded in the

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United States of America (prevalence 2.2-3.15%, prevalence in African Americans is 1.3%).[1] Psoriasis is subjected to flares or remissions with many different variations and scores of intensity. It may be symptomatic throughout life and may be progressive with age or wane in its severity. Psoriasis is the most frequent chronic disease of the skin, often debilitating, with high epidermal turnover rate and epidermal hyperplasia. The epidemiology is influenced by risk factors including skin infection, skin disorders, smoking, obesity and high body mass index, heavy alcohol consumption, stress and depression. Clinical features are cyclical, peaking during young adulthood (16 to 22 years of age) and during older ages (57 to 60 years of age).[2] The prevalence of psoriasis in Caucasians is 2–11%.[1] The prevalence of psoriasis in the United Kingdom (prevalence 1.3-2.6%) and Spain [3] decreases markedly in patients over the age of 70 years.[2] Psoriasis is more prevalent in adults than in children and more prevalent in older children than in younger ones. In the USA, the prevalence of psoriasis increases more rapidly in young female patients compared with young male patients and declines significantly in patients 70 years and older, regardless of gender.[2] Psoriasis is less common in Mongoloid population.[4] The prevalence rate was more in south and northeast Europe than in the UK. In Latin America, India, Egypt, Tanzania, China, Sri Lanka and Taiwan, the prevalence rate was less than 0.5%.[4] Broadly, psoriasis is equally frequent in men and women.[1] In Taiwan, psoriasis is less common in women.[5] Patients with psoriasis had more co-morbidities in comparison with the general population. There is positive correlation between psoriasis and diabetes mellitus, hyperlipidaemia, hypertension and cardiovascular diseases.[6-8] The occlusive vascular incidents are markedly more in patients with psoriasis than in the general population.[9] The aim of this study was to evaluate the demographics, therapeutic protocols, risk factors and co-morbidities of psoriasis in Jordan (public military health sector)

Methods

This prospective and observational study included 350 adult patients, of both genders, aged 19 -75 years diagnosed with psoriasis and managed by dermatologists. Psoriasis was divided into a severe form if PASI score >10, and a mild form if PASI score <5. The patient's information (age, gender, medical illnesses (DM, HTN, hyperlipidemia, malignancy), drugs history, smoking, psychological illness, pregnancy) was used for the study during a period of 4 years from Jan 2012 to Jan 2016 at Prince Rashid military hospital, Irbid, Jordan. The demographics, risk factors, therapeutic protocols and co-morbidities were assessed. We collected information on skin disorders and infections, pregnancy, stress, body mass index, smoking status and drug use (antihypertensive, antimalarial drugs, lithium, interferon's, NSAIDs, antibiotics, steroid withdrawal).The study was approved by the ethical and research review board committee of the Jordanian Royal Medical Services.

Statistics

The statistical significance in patient numbers between gender and various age groups was determined using chi-square test. Multiple logistic regression analysis was used to assess the correlation of co-morbidities with psoriasis according to age and gender. Odds ratios and 95% confidence interval were used to evaluate the correlation between co- morbidities and psoriasis.

Results

The study included 350 patients (192{54.9%} men and 158{45.1%} women, P>0.05) with a diagnosis of psoriasis. The number of psoriatic patients according to age and gender is shown in Table I. There was no marked sex discrepancy in the number of psoriatic Jordanian patients. The number of patients less than 27 years was comparable in both genders, but increased more in men aged 27-38 years, Table I .The maximum number was attained in Jordanian patients aged 68-75 years, in both genders, Table I. The number of psoriatic patients increased more in patients aged 68-75 years, in comparison with patients aged 59–67

years. Regarding multivariate analysis, mild psoriasis recorded OR 1.1(1.10-1.20) while severe psoriasis recorded OR 2.0(1.69-2.28). The therapeutic protocols of these 350 patients are demonstrated in Table II. Topical corticosteroids were the most commonly used drugs (94.9% of patients). Forty-five (12.9%) patients (29 men and 16 women) had systemic therapy (severe psoriasis), Table III. The incidence of patients using systemic therapy was more in males than in females {15.1 %(29/192)} vs. {10.1 %(16/158), respectively}. A total of 305 patients with mild psoriasis and 45 patients with severe psoriasis were recorded. Diabetes mellitus and hypercholesterolemia were correlated with psoriasis, Table IV. Gender and smoking (smoking: OR, 1.2 [95% CI, 1.1-1.4]) were independent risk factors for psoriasis in Jordan. Over weight patients had a mild effect on increasing the severity of the skin lesion and decreasing the improvement rate as well as smoking. History of any skin disorder diagnosis in the previous year was correlated with an OR of 3.1 (95% CI, 2.9-3.8). Having an episode of infectious disease in the last year increased the risk of psoriasis (OR, 1.8 [95% CI, 1.6-2.1]). Infectious skin disorders were correlated with an OR of 1.7 (95% CI, 1.5-1.8). Pregnancy in the previous year was correlated with a reduced risk of psoriasis (OR, 0.4 [95% CI, 0.3-0.9]). Antibiotics (tetracycline's, penicillin, ampicillin) had an OR of 1.3 (95% CI, 1.1-1.5). There was no correlation with use of antihypertensive agents (beta-blocker, ACE inhibitors mainly) (OR, 0.7 [95% CI, 0.5-0.9]). Table V.

Table I: Age and gender (number in relation with psoriasis)

Gender	19-26	27-38	39-48	49-58	59-67	68-75	Total
Male	15	19	28	36	40	54	192
Female	12	15	21	30	32	48	158

Table II: Therapeutic protocols in Jordanian patients with psoriasis.

Therapeutic protocols	Psoriatic patients (% and numbers)
*Topical corticosteroids	94.9%(333)
Tar preparations	35.2%(122)
Vitamin D analogues	19.9%(70)
Keratolytic agents	13.5%(47)
Calcineurin inhibitors	0.1%(3)
*Ultraviolet light therapy :	15.2%(53)
UVB (ultraviolet B 290-320nm)	
n BUVB (narrow band ultraviolet	10.5%(37)
B 311-313nm)	
PUVA (psoralen with ultraviolet	4.7%(16)
radiation A)	
Targeted phototherapy (UVB	
delivered with the laser system,	
Excimer308 nm)	
*Systemic treatments	12.9%(45)
Methotrexate	6.1%(21)
Systemic retinoid (Acitretin)	4.6%(16)
Cyclosporin A	1.7%(6)
Biologic therapy	0.06%(2)
TNF inhibitors:	
Etanercept	0.06%(2)
Infliximab	
Adalimumab	
IL12&23 Inhibitors:	
Ustekinumab	
Anti pathogenic T cells Agents:	
Alefacept	
Efalizumab	

Table III: Age and gender of Patients with severe psoriasis.

Gender	19-26	27-38	39-48	49-58	59-67	68-75
Male	3	4	6	6	4	6
	6.7%	8.9%	13.3%	13.3%	8.9%	13.3%
female	1	3	3	5	2	2
	2.2%	6.7%	6.7%	11.1%	4.4%	4.4%

Table VI: Correlation between co- diseases and mild or severe psoriasis.

	Multivariate analysis	
	Mild psoriasis OR(95% CI)	Severe psoriasis OR(95% CI)
Coronary artery disease	0.9(0.8-1.28)	0.8(0.78-1.21)
Hypertension	0.8(0.7-1.27)	0.95(0.85-1.42)
Hypercholesterolemia	1.9(1.7-2.1)	1.8(1.8-2.5)
Occlusive vascular incidents	0.95(0.83-1.29)	0.85(0.80-1.4)
Diabetes mellitus	1.8(1.02-1.95)	1.9(1.35-2.0)

Table V: Correlation between risk factors and OR.

Factor	OR (95%:CI)	PSORIASIS NUMBER
Skin Disorders	3.1(2.9-3.8)	Increased
Skin Infections	1.7(1.5-1.8)	Increased
Smoking	1.2(1.1-1.4)	Decreased
Infectious Diseases	1.8(1.6-2.1)	Increased
Pregnancy	0.4(0.3-0.9)	Decreased
Antibiotics	1.3(1.1-1.5)	Decreased
Antihypertensives	0.7(0.5-0.9)	Decreased

Discussion

Psoriasis is an immune genetically frequent skin disease, affecting skin, nails and joints with different systemic implications. Psoriasis is characterized by erythematous papules and plaques with silvery scale that affect any skin surface. It is a chronic inflammatory skin disease with increased epidermal proliferation. The types of psoriasis include: plaque, inverse (flexural), erythrodermic, pustular and guttate type.[10] Psoriasis has adetrimental effect on quality of health and on economic aspect. Our investigation evaluated therapeutic protocols, risk factors and co- morbidities for psoriasis. Psoriasis has strong genetic relation. The risk for having psoriasis is 4% if the parents of the person do not have psoriasis. The risk increases to 28% if one of the parents is affected and to 65% if both parents are affected.[9] According to the gender of the carrier, it is increased if the carrier is the father. Psoriasis is autosomal dominant with recessive gene traits. Psoriasis expresses traits by 3 to 4 autosomal dominant genes while one gene acts in a recessive manner. Early onset psoriasis with severe progression is correlated with human leukocyte antigen (HLA-A2, B17, B37, HLA-CW6, and DR7) factors whereas the milder, late onset form is not. The low prevalence of psoriasis worldwide is may be due to a low incidence of HLA-Cw6.[1] Although worldwide, psoriasis does not have a gender bias, in our Jordanian patients with psoriasis there were more males than females. In China, psoriasis is more frequent in males than in females.[4] In Caucasian people, the prevalence of psoriasis decrease markedly in patients above 70 years of age.[2,3] Our results found that psoriasis increased more in Jordanian patients aged 68-75 years, compared with patients aged 59–67 years. Older patients in Jordan may be at increased risk for having new onset psoriasis. This study demonstrated that the majority (94.9%) of patients had topical corticosteroid therapy. Diabetes mellitus and hypercholesterolemia were correlated risk factors in Jordanian patients with psoriasis. The severity of psoriasis is increased with smoking and with high body mass index,[11,12] obese patients are more likely to have severe psoriasis

and smoking decreases the response to the medication used for psoriasis,[13,14] also stressful life events [12] and depression increase the risk of psoriasis.[15] To enhance diagnostic precision and exclude over estimation of the prevalence of psoriasis, our study concentrated on psoriasis patients managed by dermatologists. As patients with mild psoriasis may not have been seen by a specialist during the 4 -year study period, the prevalence of mild psoriasis may be under estimated. There is a correlation between psoriasis and infectious diseases. Streptococcal infection is a risk factor for psoriasis in young people. There is a high risk of psoriasis in patients with new infectious disease, and the risk is more during the first month after an upper respiratory tract infection among persons aged 21 to 40 years.[5]

Conclusion

Psoriasis in the Jordanian population attending a public health military sector was more common in males than females and the number increased markedly in patients above 67 years

References

1. **World health organization**. *Global report on psoriasis*. 2016. pp.1-36.
2. **Gelfand JM, Weinstein R, Porter SB, *et al.*** Prevalence and treatment of psoriasis in the United Kingdom: a population-based study. *Arch Dermatol* 2005; 141: 1537–1541.
3. **Ferrándiz C, Carrascosa JM, Toro M**. Prevalence of psoriasis in Spain in the age of biologics. *Actas Dermosifiliogr* 2014; 105(5): 504-509.
4. **Yip SY.** The prevalence of psoriasis in the Mongoloid race. *J Am Acad Dermatol* 1984; 10: 965–968.
5. **Chang YT, Chou CT, Yu CW, *et al.*** Cytokine gene polymorphisms in Chinese patients with psoriasis. *Br J Dermatol* 2007; 156: 899–905.
6. **Sterry W, Strober BE, Menter A.** Obesity in psoriasis: the metabolic, clinical and therapeutic implications. Report of an inter disciplinary conference and review. *Br J Dermatol* 2007; 157: 649–655.
7. **Neimann AL, Shin DB, Wang X, *et al.*** Prevalence of cardiovascular risk factors inpatients with psoriasis. *J Am Acad Dermatol* 2006; 55: 829–835.
8. **Kimball AB, Robinson D Jr, Wu Y, *et al.*** Cardiovascular disease and risk factors among psoriasis patients in two US healthcare databases, 2001–2002. *Dermatology* 2008; 217: 27–37.
9. **Gelfand JM, Neimann AL, Shin DB, *et al.*** Risk of myocardial infarction in patients with psoriasis. *JAMA* 2006; 296: 1735–1741.
10. **Griffiths CE, Christophers E, Barker JN, *et al.*** A classification of psoriasis vulgaris according to phenotype. *Br J Dermatol* 2007;156:258-262.
11. **Herron MD, Hinckley M, Hoffman MS, *et al.*** Impact of obesity and smoking on psoriasis presentation and management. *Arch Dermatol* 2005; 141: 1527–1534.
12**. Naldi L, Chatenoud L, Linder D, *et al.*** Cigarette smoking, body mass index, and stressful life events as risk factors for psoriasis: results from an Italian case-control study. *J Invest Dermatol* 2005; 125: 61–67.
13. **Huerta C, Rivero E, Rodríguez LA.** Incidence and risk factors for psoriasis in the general population. *Arch Dermatol* 2007; 143: 1559–1565.
14. **Li W, Han J, Choi HK, Qureshi AA.** Smoking and risk of incident psoriasis among women and men in the United States: a combined analysis. *Am J Epidemiol.* 2012;175:402–413
15**. Dominguez PL, Han J, Li T, Ascherio A, Qureshi AA**. Depression and the risk of psoriasis in US women. J *Eur Acad Dermatol Venereol.* 2013; 27(9):1163–1167. Published online **2012** Oct 3.