Burden of Psoriasis

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Objective: To evaluate the personal characteristics, clinical features, comorbidities and treatment of patients with psoriasis.

Design: A Cross-Sectional Descriptive Study.

Setting: Dermatology Clinic, Salmaniya Medical Complex, Bahrain.

Method: Two hundred ten patients who attended the dermatology clinic from 1 January to 31 December 2015 were included in the study. A computer-based questionnaire was answered by the patients. The data of all patients were reviewed and confirmed with their medical records in the hospital. The following data were documented: age, sex, marital status, smoking history, disease duration, site of involvement, associated comorbidities, body mass index (BMI), and the type of treatment received.

Result: Two hundred ten patients were included in the study. One hundred twenty were males (57.1%) and 49 (23.3%) were smokers. The mean age was 28.8 years. One hundred thirty-nine (66.2%) lesions involved the scalp, 86 (41%) involved the joints and 76 (36.2%) involved the nails. Sixty-one (29%) patients had dyslipidemia; 52 (24.8%) had diabetes; 39 (18.6%) had hypertension, and 16 (7.6%) had cardiovascular diseases One hundred fifty-one (71.9%) patients were overweight/obese. One hundred sixty-one (76.7%) patients were on biological treatment. Topical treatment was the most common among biological and non-biological patients (87% and 61.2%, respectively). There was a statically significant relationship between the use of biological treatment and each of diabetes, nail involvement and scalp involvement (P-value ≤ 0.05).

Conclusion: This study highlights the burden of psoriasis in Bahrain, which may reflect the physical and economic impact of the disease.

Psoriasis is a chronic, inflammatory, immune-mediated skin disease associated with substantial comorbidities including psychological/psychiatric disorders. Comorbidities of psoriasis include obesity, cardiovascular disease, and metabolic syndrome which might significantly reduce the quality of life and life span, which emphasize the importance of proper screening and multidisciplinary treatment[1].

Data collected from 83 dermatologists in Gulf countries who answered a survey on psoriasis and its comorbidities showed that only 31% utilize a multidisciplinary management approach for psoriasis and the most common referral is from a dermatologist to rheumatologist[2].

The treatment of psoriasis has evolved with the advent of biologic therapies and their role in controlling the immunological element of psoriasis effectively, and thus reducing the risk of cardiovascular and metabolic comorbidities[1]. Literature review regarding psoriasis, comorbidities, and its management in the Middle East and particularly in the Gulf remains limited compared with the large volume of data from the Western world.

The aim of this study is to evaluate the personal characteristics, clinical features, co-morbidities and treatment of patients with psoriasis

METHOD

All Bahraini patients with the diagnosis of psoriasis between 1 January until 31 December 2015 were included in the study. The following were documented: age, sex, marital status, disease duration, site of involvement, associated comorbidities, smoking, and type of treatment received. Data were obtained from a computer-based questionnaire. The data of all patients were reviewed and confirmed with their medical records in the hospital.

SPSS version 23 software was used for data entry and analysis. Frequencies, percentages, and mean were computed for the categorical variables. Cross-tabulation was done between two categorical variables. T-test, Mann Whitney test, and Kruskal Wallis test was used to determine whether there is a significant difference in the means score of the groups. A Chi-Square test was used to determine whether there is a significant relationship

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between two categorical variables. Fisher's exact test was used to determine whether there is a significant relationship between two categorical variables if there are small expected values. Finally, a P-value of 0.05 or less was considered a statistically significant difference.

RESULT

Two hundred ten patients were included in the study. One hundred twenty (57.1%) were males and 90 (42.9%) were females. One hundred fifty-eight (75.2%) patients were married. One hundred forty (66.7%) were between 20-50 years of age. The mean age was 40.1 years (±SD =15 years). Forty-nine (23.6%) patients were active smokers, see table 1.

Table 1: Clinical and Personal Characteristics of the Patients

Characteristics		N	%
Sex	**Male**	120	57.1%
	Female	90	42.9%
	Total	**210**	**100.0%**
Age	**11 – 20**	13	6.2%
	21 – 30	51	24.3%
	31 – 40	49	23.3%
	41 – 50	40	19.0%
	51 – 60	34	16.2%
	>60	23	11.0%
	Total	**210**	**100.0%**
Marital status	**Married**	158	75.2%
	Unmarried	52	24.8%
	Total	**210**	**100.0%**
BMI	**Underweight**	7	3.3%
	Normal	50	23.8%
	Overweight	**62**	**29.5%**
	Obese	91	43.3%
	Total	**210**	**100%**
Smoking	**Yes**	49	23.3%
	No	158	75.2%
	Borderline	**3**	**1.5%**
	Total	**210**	**100%**
Comorbidities	**Diabetes**	52	24.8%
	Hypertension	39	18.6%
	Dyslipidemia	61	29%
	Cardiovascular	16	7.6%

Sixty-one (29.0%) patients suffered from dyslipidemia, followed by 52 (24.8%) with diabetes, 39 (18.6%) with hypertension and 16 (7.6%) with cardiovascular disease. One hundred fifty-one (71.9%), were overweight/obese. However, there was no statistically significant relationship between the body mass index (BMI) and site of disease involvement, see table 1.

Eighty (38.1%), were diagnosed in the first 5 years and the mean disease duration was 11.4 years (±SD=9.7 years). The age of onset of the disease in 127 (60.5%) was ≤30 years with a mean age of 28.8 years (±SD=15.4years). Furthermore, 139 (66.2%) were suffering from scalp lesions. While 86 (40.9%) patients had joint lesions and 76 (36.2%) had nail lesions, see table 2.

Table 2: Disease Duration, Age of Onset and Site of Involvement

Characteristics	Categories	N	%
Disease duration (years)	≤5	**80**	**38.1%**
	>5 – 10	47	22.4%
	>10 – 15	21	10%
	>15 – 20	32	15.2%
	>20	30	14.3%
	Total	**210**	**100%**
Age of onset (years)	≤20	74	35.2%
	21 - 30	**54**	**25.7%**
	31 - 40	31	14.8%
	41 - 50	31	14.8%
	>50	20	9.5%
	Total	**210**	**100%**
Site of involvement	Joint pain	86	40.9%
	Nail	76	36.2%
	Scalp	139	66.2%

Table 3: Joints Involvement

Joints Involved	Number & (%)
Knees	55 (26.2%)
Hands	37 (17.6%)
Feet	22 (10.5%)
Elbow	20 (9.5%)
Shoulders	10 (4.8%)
Back	8 (3.8%)
Big toe	7 (3.3%)
Other joints	7 (3.3%)

Fifty-five (26.2%) patients had knee joint lesions, 37 (17.6%) had hand joints lesions, 22 (10.5%) feet joints lesions, 20 (9.5%) elbow joints lesions and 10 (4.8%) shoulders lesions, see table 3. The study found a statistically significant relationship between nail involvement and joint pain (P-value=0.007).

One hundred sixty-one (76.7%) patients were on biological treatment. Meanwhile, topical treatments were the most common associated treatment among both biological and non-biological treatments, 140 (66.7%) and 30 (14.3%) patients, respectively. Methotrexate was the second most common associated treatment in biological treatment, 16 (7.6%), and cyclosporine was the second in non-biological treatment, 12 (5.7%), see table 4.

Table 4: Type of Treatment

Associated treatment	Biological Treatment		
	Yes,161 (76.7%)	**No, 49 (23.3%)**	**Total, 210 (100%)**
	n (%)	**n (%)**	**n (%)**
Topical	140 (87.0%)	30 (61.2%)	170 (80.9%)
Topical and methotrexate	16 (9.9%)	1 (2.0%)	17 (8%)
Topical and phototherapy	1 (0.6%)	5 (10.2%)	6 (2.9%)
Topical and cyclosporine	0 (0.0)	12 (24.5%)	12 (5.7%)
Topical and Acitretin	0 (0.0)	1 (2.0%)	1 (0.5%)
No	4 (2.5%)	0 (0.0)	4 (1.9%)
Total	**161 (100.0%)**	**49 (100.0%)**	**210 (100%)**

The study revealed a statistically significant relationship between using the biological treatment and diabetes and nail involvement (P-value=0.0009 and 0.033), respectively. Meanwhile, there was an almost significant relationship with scalp involvement. On the other hand, there was no statistically significant relationship with joint pain, presence of hypertension, cardiovascular disease, or dyslipidemia, see table 5.

Table 5: Relationship between Biological Treatment and Site of Involvement/Comorbidities

Characteristics		Biological Treatment			P-value
		Yes	No	Total	
		n (%)	n (%)	n (%)	
Joint pain	Yes	67 (77.9%)	19 (22.1%)	86 (40.9%)	0.700
	No	94 (75.8%)	30 (24.4%)	124 (59%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	
Nail involvement	Yes	52 (68.4%)	24 (31.6%)	76 (36.2%)	0.033
	No	109 (81.3%)	25 (18.7%)	134 (63.8%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	
Scalp Involvement	Yes	101 (72.7%)	38 (27.3%)	139 (66.2%)	0.055
	No	60 (84.5%)	11 (15.5%)	71 (33.8%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	
Diabetes	Yes	33 (63.5%)	19 (36.5%)	52 (24.8%)	0.009
	No	128 (81%)	30 (19%)	158 (75.2%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	
Hypertension	Yes	31 (79.5%)	8 (20.5%)	39 (18.6%)	0.644
	No	130 (76%)	41 (24%)	171 (81.4%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	
Cardiovascular	Yes	12 (75%)	4 (25%)	16 (7.6%)	1.000
	No	149 (76.8%)	45 (23.2%)	194 (92.4%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	
Dyslipidemia	Yes	48 (78.7%)	13 (21.3%)	61 (29%)	0.658
	No	113 (75.8%)	36 (24.2%)	149 (70.9%)	
	Total	161 (76.6%)	49 (23.3%)	210 (100%)	

DISCUSSION

This study revealed that males are more affected by psoriasis (male:female ratio of 1.3:1). This is comparable to a study from Saudi Arabia which found that there was a male preponderance with a sex ratio of 1.4:1[3]. A similar study from Tunisia found a sex ratio (male/female) of 1.68:1[4].

The high prevalence of psoriasis in the age group 20-50 years is comparable to a study in Spain[5]. The mean age of psoriatic patients and the age of onset of psoriasis in our study were almost identical to a study from Tunisia with a mean psoriatic patients age of 40.8±17.4 years[4]. In contrast, a study from the USA showed an average age of onset of psoriasis of 28 years, which is considerably varied worldwide compared to 36 years in a study from China [6,7].

Obesity and smoking were found to be more common among psoriatic patients compared with non-psoriatic patients[8]. A study from Kuwait showed more obese among psoriatic patients compared to controls (32.5%, 41% and 17% in mild-moderate psoriasis, severe psoriasis, and controls respectively)[9]. Smoking was found in 39.2% among Tunisian psoriatic patients[4].

Many studies conducted worldwide including Middle Eastern countries confirmed the association between psoriasis and metabolic syndrome[10]. One study from Tunisia showed a high prevalence of blood pressure (11.3%), diabetes (9.8%) and dyslipidemia (9.7 %) in patients with psoriais[4]. In addition, a study in Kuwait showed prevalence rates of risk factors in those with mild-moderate psoriasis, severe psoriasis, and controls as follows; coronary heart disease (4.1%, 8.35% and 1.42%), diabetes mellitus type II (37.4%, 41% and 16%), hypertension (32%, 40.3% and 11.55%), dyslipidemia (14.1%, 22.48% and 4.96%) and metabolic syndrome (16%, 26.4% and 6.8%)[9].

The high prevalence of scalp involvement in our study is similar to a study suggesting that 75-90% of psoriatic patients have scalp involvement[11]. Meanwhile, our figure is much higher than that found in Saudi Arabia showing scalp involvement of only 41.8%[3]. On the other hand, nail involvement was variable in different studies, ranging between 10–80% of psoriatic patients[12].

Psoriatic arthritis appears to affect 5–30% of patients with cutaneous psoriasis[13]. A study found that undefined types of arthritis (joint pain) in 7.2% of the psoriatic patients[3]. Another study found arthritis in 30% of psoriatic patients[14]. A similar study showed a prevalence of inflammatory arthritis of 20%, 31% and 10.68% in mild-moderate psoriasis, severe psoriasis[9]. However, it is as high as 73% in Iranian psoriatic patients[15].

In our study, knee joints were the most common joint involved which was similar to a study by Rajendran et al[16]. Further, a significant correlation between nail changes and psoriatic arthritis has been clearly stated in different studies as well as our study[17].

Proper treatment and management of psoriatic patients remain challenges to dermatologists. A discrepancy exists among African and the Middle Eastern physicians concerning the clinical relevance of immunogenicity to biologics despite the increasing data across inflammatory diseases[18]. This study found that topical treatment was the main treatment option as isolated or associated treatment for psoriasis which is consistent with the American Academy of Dermatologists (AAD) recommendations[19]. Atypical forms of psoriasis such as the scalp, face, intertriginous areas, genitals, hands, feet, and nails, may result in more frequent systemic medications as topical treatments may not be satisfactory or maybe too strong for these sensitive areas[20,21]. This may explain the significant relationship between biological treatment and psoriasis involving nails found in this study.

Limitations of your study: The study included Bahraini patients who attended only one clinic; this might not reflect the actual number in the total population. In addition, there was no objective assessment of the severity of the disease.

CONCLUSION

This study could give a good idea of psoriasis in our population. It may also reflect the nature, physical and economic impact of psoriasis among patients. Further multicentric study is recommended to address the nation-wide magnitude of the problem.

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