

Epidemiologic Study of Psoriasis and Concomitant Diseases Among Patients Referred to Dermatology Clinic of Imam Khomeini Hospital, Ahvaz 2006 to 2011

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Abstract

Background: Psoriasis is a chronic skin disease which continually causes other systemic disorders such as, hypertension and diabetes for unknown reasons. The aim of this study was to determine the epidemiology of psoriasis and concomitant diseases among patients referred to the dermatology clinic of Imam Khomeini Hospital of Ahvaz during 2006-2011.

Materials and Methods: This descriptive study was performed on 854 patients with skin psoriasis referred to Ahvaz' Imam Khomeini Hospital during 2006 to 2011. Medical records pertaining to the patients were studied in terms of features such as age, gender, family history, disease onset, disease duration, clinical form, location of the lesion, and concomitant diseases, e.g. hypertension, diabetes, depression, hypothyroidism, lupus, vitiligo and arthritis. Data were analyzed by SPSS software and reported as percent, mean and standard deviation.

Results: Of 854 patients investigated during 5 years, 489 (57%) were male and 365 (43%) were female. The mean age of patients was 31.2 ± 15.6 years; the mean age of disease onset was 26.7 ± 11.7 years. Mean duration of disease was 12.3 ± 6.9 years in men and women; 254 (29.8%) of patients had a positive family history of the disease. Most parts in the body which affected were feet (42%) and hands (34%). The most common clinical form of psoriasis was vulgaris (71.4%). Furthermore, other disease which observed with psoriasis were including; hypertension (32.7%), diabetes type 2 (25.6%), depression (16.9%), arthritis (9.4%), hypothyroidism (6.2%), vitiligo (5.1%) and lupus (4.1%).

Conclusion: Given the high percentage of diseases associated with psoriasis in the study, it is necessary to improve the patients' awareness about the concomitant diseases, how to deal with them and doing further screening for better and earlier identification of these problems.

Keywords: Epidemiology, Psoriasis, Concomitant disease

Introduction

Psoriasis is a common chronic skin disease in which the red lesions appear on the skin in some parts of the body such as extremities (hand and foot). These lesions have very fine and silvery shells. The disease may be limited to a point, and or appears as very spread, and based on the area of involvement, it creates superficial problems for the patient. The prevalence of the disease in different populations is 1-3% (1). The main cause of psoriasis is not fully addressed, but probably genetic, immune and environmental factors are involved in its creation (2, 1). Psoriasis often is affecting youth, but it can occur at any ages, and affects men and women equally. Psoriasis appears in different forms, the most common form is called vulgaris psoriasis. Erythrodermic psoriasis, guttate psoriasis, pustular psoriasis and reverse psoriasis are also other forms of the disease (3). In recent decades, psoriasis is not considered only as a disease that affects the human's skin and appearance, but this disease is a systemic problem and a risk factor for cardiovascular and other body systems. The relationship between inflammatory systemic diseases such as psoriasis and vitiligo with diseases such as hypertension and diabetes has been demonstrated in the studies (4-6). Systemic inflammation in psoriasis causes the increased C-reactive protein, homocysteine, and inflammatory cytokines e.g. tumor necrosis factor-alpha, interleukin-6, 17, 20, 22, 23, and interferon- γ , which play an important role in the pathogenesis of psoriasis and affecting patients with systemic inflammatory diseases (7-9).

The use of medications such as cyclosporine, methotrexate and corticosteroids for the treatment of patients with psoriasis also increase risk of a systemic inflammatory disease (10-12). The studies show a relationship between psoriasis and diabetes (4, 13-15), hypertension (16), myocardial infarction (7, 17,18) and depression (19-21). In a

study conducted on 200 patients with psoriasis in Ahvaz results showed that; along with psoriasis, three patients had vitiligo and one patient had lupus (22).

because of lack of exact statistics about prevalence of concomitant diseases with psoriasis in Ahvaz, the primary aim of this study was to determine the epidemiology of psoriasis and concomitant diseases among psoriasis patients referred to the dermatology clinic of Ahvaz Imam Khomeini Hospital from 2006 to 2011.

Materials and Methods

This is a descriptive study that conducted on 854 patients with psoriasis referred to Ahvaz Imam Khomeini Hospital between 2006 to 2011. The Patients' records were studied regarding age, gender, family history, time of disease onset, disease duration, clinical form, location of the lesion, and concomitant diseases, e.g. hypertension, diabetes, depression, hypothyroidism, lupus, vitiligo and arthritis. The design of study approved by Ethical Committee of Gachsaran Islamic Azad University, Gachsaran, Iran.

Patients were classified into four age groups; under 20 years, 21 to 40 years, 41 to 60 years and above 61 years old. Inclusion criteria was included patients who were known as with psoriasis, patients hospitalized for psoriasis, a six-month history of disease, and having concomitant disease. Patients were diagnosed by a dermatologist according to clinical signs of psoriasis (plaques or gray-silver color scaly papules on all parts of the body). Based on the extent of the lesions, patients were divided into five categories of psoriasis vulgaris, erythrodermic, guttate, postular and reverse. Blood pressure was measured when participants were in the sitting position three times with a time interval of every 5 minutes by a mercury sphygmomanometer and a stethoscope and using brachial artery. The average of three measurements was used in this study. According to the diagnostic criteria of the

International Diabetes Federation, if the systolic and diastolic blood pressure were more than 130 and 85 mmHg respectively, or hypertension previously diagnosed by a specialist, patient was considered to have hypertension. Patients were confirmed as a case of type 2 diabetes if they had fasting blood glucose more than 100 mg/dl, or previously diagnosed by an specialist (23). Depression, arthritis, hypothyroidism, vitiligo and lupus also were recorded as concomitant based on medications recorded in the patient's records and the doctor's confirmation.

Statistical analysis was performed using SPSS ver 16. Descriptive statistics (frequency, percentage, Mean, standard deviation) was used to analyze the data.

Results

Of 854 patients who assessed over 5 years, 489 patients (57%) were male and 365 (43%) were female. The male to female ratio was of 1.4 to 1. The mean age of patients was 31.2 ± 15.6 years (2 to 87

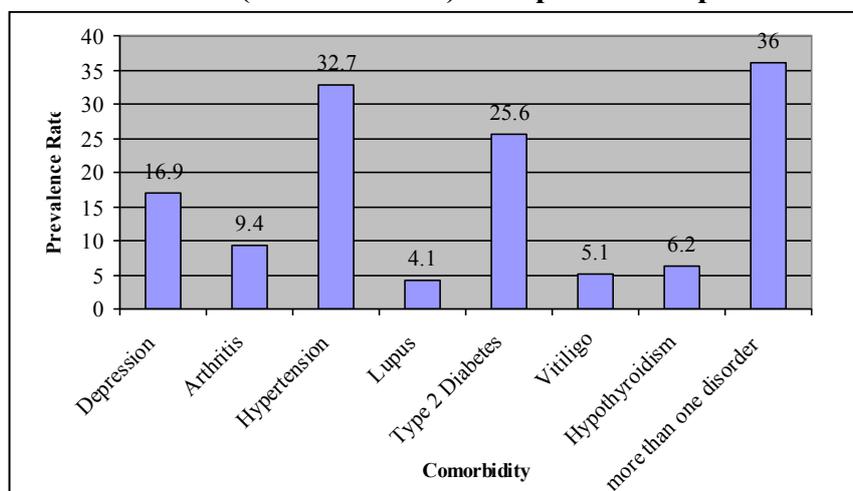
years). The mean age of disease onset was 26.7 ± 11.7 . Most patients were in their twenties (39.7%) and the highest had more than 61 years (3.6%). The mean duration of the disease in women and men was 13.4 ± 8.5 and 11.6 ± 9.1 years respectively, with a mean of 12.3 ± 6.9 years. A total of 254 (29.8%) of patients had positive family history of the disease. The most common sites affected were legs (42%) and hands (34%) and the least sites affected were the trunk (11%), head and neck (7%). The most common clinical forms of psoriasis were vulgaris (71.4%), erythrodermic (10.6 %), reverse (8.3 %), postular (6.4%) and guttate (3.3 %) (Table 1).

Along with psoriasis, 32.7% of patients had hypertension, 25.6% had diabetes type 2, 16.9% had depression, 9.4% had arthritis, 6.2% had hypothyroidism, 5.1% had vitiligo and 4.1% had lupus. Meanwhile, 308 (36%) were patients who had more than one disorder associated with psoriasis (Figure 1).

Table 1: Characteristics of patients

Variable	Numbers (present)
Gender	
Male	489 (57)
Female	365 (43)
Age of onset (years)	
<20	340 (39.7)
40-21	269 (31.5)
60-41	214 (25.2)
>60	31 (3.6)
Family history	
Man	165 (19.4)
Woman	89 (10.4)
Duration (years)	
Male	11.6
Female	13.4
Sites involved	
Head and Neck	60 (7)
Hands	291 (34)
Trunk	92 (11)
Legs	360 (42)
Genital	51 (6)
Clinical form	
Vulgaris	61 (71.4)
Erythrodermic	90 (10.6)
Reverse	70 (8.3)
postular	55 (6.4)
Guttate	28 (3.3)

Figure 1: Associated diseases (Comorbidities) with psoriasis in patients under study



Discussion

Psoriasis is a chronic disease that begins in late childhood or early adulthood and continues throughout life (2). The aim of this study was to determine the epidemiology of psoriasis and concomitant diseases in patients referred to the dermatology clinics of Ahvaz' s Imam Khomeini Hospital in 2006 to 2011

The mean age of patients in this study was 31.2 ± 15.6 years (range 2 to 87 years), which most of them were male. Our findings are in line with the study Vena et al., (9) and Layegh et al. (21). One reason for the greater number of male patients than women in this study and similar studies may be due to that; men have more contact with the mental and physical environmental stresses that can cause damage to the skin.

The mean age of onset of disease in patients in the present study was 26.7 years; most of them were in the age group below 20 years. This finding is consistent with the studies of Karayi et al (22) and Farnaghi and Moiin (1998) in Iran (24), but they are not consistent with the studies of Kaye et al in America (25) and Brauchli et al., in Switzerland(15) which found the age of onset of disease over 60 years. This discrepancy is may due to greater attention and willingness to care and treatment in the younger individual than the older population.

Positive family history of psoriasis was found in 29.8% of patients. The finding of the study is not consistent with Barzegari et al (26) and Farnaghi and Moiin (1998) in Iran (24%) (24) and Al-Mutairi et al., (12.9 %) in Kuwait (27), but it is nearly similar to the study of Kwon et al., in South Korea (28) which reported a family history of the disease in 32.4% of patients. It has been reported that; one of reasons for positive history in these patients is the role of genetic factors involved in the disease that

causes to transmit it from generation to generation. It must be said that there is no predictable inheritance pattern of the disease and may be a person who affected with the disease with no family history (3).

In the current study the most common sites affected were feet, hands, head, neck and trunk. The most common sites of involvement in the study of Ghaderi and Madar Shahian (29) and study of Farnaghi and Moiin (24) were reported the scalp and nails which are inconsistent with the results of our study. However, the findings of this study are similar with the statistics presented in the textbooks of dermatology (1-3). Perhaps, the high prevalence of the disease in the hands and feet is due to the more activity of these sites as well as more contact with environmental factors that can affect these parts.

Based on the clinical form of the disease, vulgaris was the most frequent type of psoriasis, and guttate was the least. In the studies conducted by Farnaghi and Moiin (24), Yaghoubi et al., (30) and Ghiasi et al., (31) vulgaris was reported as the most common type of psoriasis and these findings are similar to our study.

In this study, the most common disorder associated with the psoriasis was high blood pressure, type 2 diabetes, depression, arthritis, hypothyroidism, vitiligo and lupus respectively. Meanwhile, 313 (36%) had more than one disorder associated with psoriasis. In the numerous studies, one of disorders associated with the psoriasis was high blood pressure, with percentages varying between 8.1 to 46.6 (31-34).Of causes of hypertension in patients with psoriasis can be the increased angiotensin converting enzyme (ACE), increased endothelin 1 (ET-1), an increase in the rennin, increased tumor necrosis factor alpha and TNF, the increased production of IL-17 and the excessive use of

corticosteroid drugs that increase the secretion of inflammatory cytokines from keratinocytes (35-37). In the present study, one of the diseases associated with psoriasis was type 2 diabetes, with the prevalence of 25.6%. Compared with other studies that reported the prevalence of diabetes in the patients with psoriasis was between 20-59% (4, 16, 31-34, 38), the prevalence of diabetes is relatively lesser among the patients with psoriasis in the present study. Possible reasons for the association between psoriasis and diabetes can be an important influence of tumor necrosis factor alpha TNF and interleukin 1 and 6 in the Immunopathogenesis that causes the endothelial dysfunction, changes in metabolism of glucose and the increased insulin -resistance and type 2 diabetes in patients with psoriasis (33, 34, 38-41). The third disorder associated with psoriasis was depression, which had lesser percentage of the prevalence compared with studies conducted by Enshaieh et al., (42), Mattoo et al., (43), Parafianowicz and colleagues (44) , Picardi et al., (45), Devrimci-Ozguven et al., (46), and Layegh et al., (21) that reported the rate of depression in patients with psoriasis 16.5 %, 29 %, 31.5%, 45%, 51% and 69.4 % respectively. Mental problems related to patients with psoriasis are more centered on quality of life. Reasons for mental disorders, such as, depression in patients with psoriasis can be due to increased awareness about mental disorders in recent decades, with increased attention to aesthetic issues. On the other hand, fear of competition, the stressful daily life and feelings of stigmatization in patients with psoriasis compared with the normal population, causes patients tend more toward isolation. Also use the corticosteroid drugs, chronic nature of the disease and recurrent episodes should be considered as causes of depression in patients with psoriasis (45). Other underlying diseases associated with

psoriasis in the present study were arthritis, hypothyroidism, vitiligo and lupus. Numerous studies have pointed to a relationship between the above diseases with psoriasis (47-56). It seems that; due to the genetic factors, taking corticosteroid drugs, presence of immune and inflammatory agents such as tumor necrosis factor alpha (TNF), psoriasis has been turned into a multi-system disease and the risks of various diseases increase in addition to the reasons mentioned above. Also, vitiligo and lupus associated with psoriasis can further strengthen the hypothesis that psoriasis is an autoimmune disease. In our study, the number of patients with psoriasis and arthritis was lower compared to other studies (49-51) which its reasons are not known for researchers, and it needs more studies to clarify the reason.

Conclusions

Our findings confirmed the results of other studies about concomitant of high blood pressure, type 2 diabetes, depression, arthritis, hypothyroidism, vitiligo and lupus with psoriasis. It is expected that the health authorities handle the care and of patients with psoriasis better and more comprehensive than ever before, and consider this disease as a multi system disorder. It is recommended that patients use newer and better treatments and cares, and try to develop changes in their lifestyle as much as possible to reduce risk factors for the disease.

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