Epidemiology of Psoriasis in Damietta Governorate, Egypt

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Abstract

Background: Psoriasis is an autoimmune, chronic, non-contagious, recurrent, inflammatory skin disorder. Its prevalence is estimated to be variable all over the world. The typical skin lesions of psoriatic patients are sharply demarcated erythematous plaques covered with silvery or opalescent scales. It is associated with variable aggravating factors and co-morbidities.

Aim of the Study: The aim of this work was to identify the prevalence of psoriasis in Damietta Governorate and to define the possible precipitating factors affecting it and associated co-morbidities.

Methods: The study will be performed on psoriatic patients attending the Dermatology and Andrology Department of Hospitals of Damietta Governorate 3 days per week in a period of continuous six months.

The psoriatic patients will be subjected to previously made questionnaire for detailed medical history of psoriasis including personal, present, past and family history then general, local examination and detection of severity of psoriasis by PASI, all filled by the investigating doctor.

The aim of the study and the details of questionnaire will be explained to all patients before taking their informed consent.

Results: The result of the present study showed that 303 psoriatic patients from total 65,000 patients attending Damietta Hospital of Dermatology, Andrology and Leprosy with 0.5% prevalence which reflects the prevalence in Damietta. The most common triggering factors of psoriasis of the studied group were psychological exacerbation, seasonal exacerbation (winter), trauma (Keobner phenomenon) and tobacco smoking; (86.1%, 62.4%, 29.4% and 22.1%) respectively. The most common associated co-morbidities of the studied group are heart disease with percentage of (27%), hypertension (24.4%), abnormal lipid profile (17.2%), NID diabetes (13.5%), liver disease (7.3%), ID diabetes (2.6%), atopic dermatitis (2.3%) and tobacco addiction (1.7%).

Conclusion: Psoriasis prevalence in Damietta is about 0.5% and it is often associated with systemic co-morbidities that can significantly impact quality of life such as, hypertension, obesity, NID diabetes, liver disease and ID diabetes. Common triggering factors of psoriasis of the studied group were psychological exacerbation, seasonal exacerbation (winter), trauma (Keobner phenomenon) and tobacco smoking.

Key Words: Psoriasis – Damietta – Triggering factors – Associated co-morbidities.

Introduction

PSORIASIS is an autoimmune, chronic, non-contagious, recurrent, inflammatory skin disorder. In Western populations, its prevalence is estimated to be as high as 2.8%. The typical skin lesions of psoriatic patients are sharply demarcated erythematous plaques covered with silvery or opalescent scales [1].

Plaque psoriasis is the most common form of the disease, affecting 80-90% of the patients. The microscopic alterations of psoriatic plaques include an infiltration of immune cells in the dermis and epidermis, a dilatation and an increase in the number of blood vessels in the upper dermis, and a massively thickened epidermis with atypical keratinocyte differentiation [2].

It is known that genetic, immunological, and environmental factors contribute to its etiopathogenesis. Several factors such as trauma, stress infections and medications may exacerbate psoriasis. The most common medications known to trigger or worsen existing psoriasis include lithium gold salts, beta blockers, and antimalarial [3].

It is not a life threatening disease but psoriasis lesions can cause pain, itching, bleeding and in some even arthritis. In many cases, patient with psoriasis are unable to carry out their daily activities. They suffer from emotional perception, sexual relationship and career choices [4].
Treatments for psoriasis include immunosuppressive drugs such as methotrexate, cyclosporine, and fumaric acid esters. However, advances in mechanistic understanding of signaling pathways involved in the pathogenesis of psoriasis have led to the testing of biological therapies. These include immune suppressive drugs (e.g., alefacept) and anticytokine therapies (antitumor necrosis factor [TNF] therapies) adalimumab, etanercept, infliximab and ustekinumab [1].

The aim of this study was to identify the prevalence of psoriasis in Damietta Governorate and to define the possible precipitating factors affecting it and associated co-morbidities.

Patients and Methods

The methodology of this study will be described according to:

1- Administrative design:

The work was started after obtaining approval from the Department of Dermatology and Andrology and the research ethics committee in Benha Faculty of Medicine. The work was done in 3 days per week in a period of continuous six months from December 2014 to May 2015.

2- Technical design:

A- Place of the study:

The patients will be collected in Damietta Governorate.

B- Study sample (participants):

The study will be performed on psoriatic patients attending the Dermatology and Andrology Department of Hospitals of Damietta Governorate 3 days per week in a period of continuous six months from December 2014 to May 2015.

The psoriatic patients will be subjected to previously made questionnaire for detailed medical history of psoriasis including personal, present, past and family history then general, local examination and detection of severity of psoriasis by PASI all filled by the investigating doctor.

The aim of the study and the details of questionnaire will be explained to all patients before taking their informed consent.

C- Current study:

This is an across sectional observational study.

3- Statistical design:

All statistical analyses were carried out in STATA/SE version 11.0 for windows.

2 types of studies were done:

- Descriptive: e.g. number and percentage (%).

- Analytical:

  - Chi-squared ($\chi^2$): It is used to compare between two groups or more regarding one qualitative variable in 2x2 contingency table or raw-column complex table.
  - Fisher Exact Test (FET): It was used to compare between proportions at small frequencies.
  - Z test: Between proportions.
  - $p$-value:
    - * Significant difference if $p$ below 0.05.
    - * Non significant difference if $p$ above 0.05.
    - * Highly significant difference if $p$ below 0.001.

Results

The result of the present study showed that 303 psoriatic patients from total 65,000 patients attending Damietta Hospital of Dermatology, Venerology and Leprosy with 0.5% prevalence which reflects the prevalence in Damietta.

The result of present study showed that the mean of body mass indices was $28.1 \pm 6.9$ and it is found that the prevalence of overweight and obesity in psoriatic patients represents 40 (13.20%) and 124 (40.92%) respectively (Fig. 1).

As regard pruritus, most of patients suffered from pruritus (93.1%) while only 6.9% shows no pruritus (Fig. 2).

The most common triggering factors of psoriasis of the studied group were psychological exacerbation, seasonal exacerbation (winter), trauma (Koebner phenomenon) and tobacco smoking; (86.1%, 62.4%, 29.4% and 22.1%) respectively (Table 1).

The result of this study showed that the most common associated co-morbidities of the studied group are heart disease with percentage of (27%), hypertension (24.4%), abnormal lipid profile (17.2%), NID diabetes (13.5%), liver disease (7.3%), ID diabetes (2.6%), atopic dermatitis (2.3%) and tobacco addiction (1.7%) (Table 2 and Fig. 3).

Mean of PASI score of the studied group was 11.1, moderate psoriasis was the most common with the percentage of 46.86% (Fig. 4).

Mean of DLQI score of the studied group was 14.6. The most common effect was very large effect (45.21%) (Fig. 5).
Table (1): Triggering factors of the studied group.

<table>
<thead>
<tr>
<th>Triggering factors</th>
<th>The studied group (N=303)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
</tr>
<tr>
<td>• Keobner</td>
<td>89</td>
</tr>
<tr>
<td>• Seasonal exacerbation</td>
<td>189</td>
</tr>
<tr>
<td>• Infection</td>
<td>13</td>
</tr>
<tr>
<td>• Alcohol intake</td>
<td>0</td>
</tr>
<tr>
<td>• Smoking</td>
<td>67</td>
</tr>
<tr>
<td>• Psychological exacerbation</td>
<td>261</td>
</tr>
<tr>
<td>• Sudden withdrawal of systemic corticosteroids</td>
<td>1</td>
</tr>
<tr>
<td>• Beta blockers</td>
<td>4</td>
</tr>
<tr>
<td>• Antimalarial</td>
<td>0</td>
</tr>
<tr>
<td>• ACEI</td>
<td>10</td>
</tr>
<tr>
<td>• Calcium inhibitor</td>
<td>5</td>
</tr>
<tr>
<td>• Lithium</td>
<td>0</td>
</tr>
</tbody>
</table>

Table (2): Associated co morbidities of the studied group.

<table>
<thead>
<tr>
<th>Associated co morbidities</th>
<th>The studied group (N=303)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Atopy</td>
<td>7</td>
</tr>
<tr>
<td>• Diabetes ID</td>
<td>8</td>
</tr>
<tr>
<td>• Diabetes NID</td>
<td>41</td>
</tr>
<tr>
<td>• Heart disease</td>
<td>82</td>
</tr>
<tr>
<td>• Hypertension</td>
<td>74</td>
</tr>
<tr>
<td>• Liver disease</td>
<td>22</td>
</tr>
<tr>
<td>• Renal insufficiency</td>
<td>1</td>
</tr>
<tr>
<td>• HIV</td>
<td>0</td>
</tr>
<tr>
<td>• Gout</td>
<td>1</td>
</tr>
<tr>
<td>• Abnormal lipid profile</td>
<td>52</td>
</tr>
<tr>
<td>• Skin cancer</td>
<td>0</td>
</tr>
<tr>
<td>• Alcoholism</td>
<td>0</td>
</tr>
<tr>
<td>• Tobacco addiction</td>
<td>5</td>
</tr>
<tr>
<td>• Vitiligo</td>
<td>3</td>
</tr>
<tr>
<td>• Crohn’s</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. (1) BMI (kg/m²)

Fig. (2) Existence of pruritus

Fig. (3) Associated co-morbidity
Discussion

This is a community-based study describing the prevalence of psoriasis in Damietta, Egypt. The governorate covers an area of 910.3 km², representing 0.1% of the Republic’s area, and encompasses 4 marakz, 10 cities, 47 rural units and 85 villages. According to the preliminary results of 2013 census, population is about 1.1 million people; 38.4% of them live in urban areas and 61.6% in rural areas. The population natural growth rate is 21.6 per thousand (Damietta Governorate, CAPMAS "According to Census Preliminary Results", 2013) [5].

The present study reported that the overall prevalence of psoriasis was 0.5%. In comparison to related studies, in Europe, prevalence rates varied between 0.73% (in Scotland) and 2.9% (in Italy). Most of the studies reported a prevalence above 1%; specifically 2.00% in Sweden, 1.10% in Norway, 2.84% in Denmark, 1.58% in Yugoslavia, 1.48% in United Kingdom, 1.43% in Spain, 2.90% in Italy, and 2.00% in Germany. The only study from European Russia reported a prevalence of 0.72%. Rates in United States varied from 0.7% to 2.6%. The prevalence rates reported in Latin Americans-Indians, from Africa (Egypt and Tanzania) and Asia (China, Sri Lanka and Taiwan) varied from no cases detected to estimates below 0.5% [6]. In Malaysia another study reported dramatic difference as it reported prevalence rate of 9.5% [7].

The low prevalence in Damietta may be due to poor compliance of psoriatic patients which related to false patient’s beliefs about the disease origin, course, duration as well as stigmatization and dissatisfaction with antipsoriatic therapy which is relatively expensive. The present study was done in a general hospital and the private sector has a weak recording system, also the relatively small number of population in Damietta.

The present study reported that psoriasis was found to be common in males 66.7% than females 33.3% which is in agreement with Qazi et al., [8] and Tamás et al., [9] who reported that psoriasis was found to be common in males but not in agreement with Sinniah et al., [7] that reported that the prevalence of psoriasis was the same in both males and females.

The present study reported that obesity accounts for 40.92% of patients which is in agreement with Gleison and Larissa, [10] who proved that there is positive correlation between body mass index and prevalence and severity of psoriasis but not in agreement with Tamás et al., [9] who reported that percentage of obesity was only 16%.

The present study shows that (93.1 %) of patients suffered from pruritus which is in agreement with Czarnecka et al., [11] who reported that 88.3% of analyzed patients were complaining of itching and the most common factor which exacerbated pruritus was stress (39.6%). Pruritus in psoriasis was independent of gender, illness duration and extent of skin lesions and also in agreement with Nevitt and Hutchinson, [12] who reported that (75%) of their patients described the condition as itchy.

The most common triggering factors of psoriasis of the studied group were psychological exacerbation, seasonal exacerbation (winter), trauma (Koebner phenomenon), tobacco smoking and drugs (86.1 %, 62.4%, 29.4%, 22.1 % and 6.6%) respectively this is in agreement with Nevitt and Hutchinson, [12] who reported that; trauma (Koebner phenomenon), infection, stress and sun exacerbation
Abd El-Aziz El-Taweel, et al. gives the ratio of (5%, 12%, 37% and 1% respectively and in agreement with Qazi et al., [8] who reported that seasonal variation was noted in 16.7% and in most patients there was a clear winter exacerbation of lesions. The other exacerbating factors seen were infections in 17.9% of patients and drugs in 6.2% of patients.

In Qazi et al., [8] study; the Kashmir valley, an area with a temperate climate lies at the northern most end of the Indian subcontinent and is perched securely within the Himalayas the temperature drops to as low as –10 to –15 centigrade during winters, but Damietta lies follow within the Mediterranean coastal climatic region, winter is some what rainy and temperature with an average of 22ºC and low of 10ºC and summer is hot humid with average of temperature ranges 32ºC and a low of 19ºC.

The result of this study shows that the most common associated co morbidities of the studied group are heart disease with percentage of (27%), hypertension (24.4%), abnormal lipid profile (17.2%), NID diabetes (13.5%), liver disease (7.3%), ID diabetes (2.6%), atopic dermatitis (2.3%) and tobacco addiction (1.7%) this is in agreement with Tamás et al., [9] who reported that the most common associated co morbidities were hypertension (31 %), obesity (16%), liver disease (11%), gastrointestinal disease (9%), atherosclerosis (7%), type 2 diabetes mellitus (7%), and heart insufficiency (6%).

The inflammation in psoriasis develops atherosclerotic and metabolic disorders, and vice versa. Therefore, the concept of ‘psoriatic march’ has been proposed to clarify the effect of severe psoriasis on the development of cardiovascular diseases. Consequently, a dermatologist is not only responsible for treatment of skin lesions, but also for the diagnosis and monitoring of concomitant disorders. Early and appropriate treatment can prevent the development of associated metabolic disorders [13].

In the present study; mean of PASI score of the studied group was 11.1, moderate psoriasis was the most common with the percentage of 46.86%. And mean of DLQI score of the studied group was 14.6. This is in agreement with Tamás et al., [9] who reported that mean PASI was 15, and mean DLQI was 11. Alert et al., [14] concluded that more than 40% of patients reported that psoriasis seriously affects their life. Nevitt and Hutchinson. [12] reported that the mean PASI scores of their patients was 2.9 while Tamás et al., [6] reported that PASI score of their patients was 10 or more in (59%) of patients, and DLQI was above 10 in (51 %) of patients.

It is found that psoriasis causes a greater negative effect on quality of life than life threatening chronic diseases [15].

Conclusion:
Psoriasis prevalence in Damietta is about 0.5% and it is often associated with systemic co-morbidities can significantly impact quality of life such as, hypertension, obesity, NID diabetes, liver disease and ID diabetes. Common triggering factors of psoriasis of the studied group were psychological exacerbation, seasonal exacerbation (winter), trauma (Keobner phenomenon) and tobacco smoking.

Future studies are recommended to collect more data and to follow the influence of changing the methods of therapy on the prevalence of psoriasis. The prevalence of psoriasis, risk factors and associated co-morbidities requires a public health approach, with the aim of management of the diseases at a national level. Such survey studies are of great importance for supplying valid data bases required for planning of appropriate national health care strategies.

References
5- (Damietta Governorate, CAPMAS "According to Census Preliminary Results", 2013).
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