A DESCRIPTIVE STUDY ON THE CLINICAL MANIFESTATIONS AND SEVERITY OF PSORIASIS IN PATIENTS PRESENTING TO DERMATOLOGY OPD OF A TERTIARY HEALTH CARE CENTER IN CENTRAL KERALA

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ABSTRACT

BACKGROUND

Psoriasis is heterogeneous in its history, manifestations, presenting age, sites affected and environmental triggers. It presents as small localized lesions to generalized exfoliation type. An understanding of the most common clinical manifestation and degree of severity will help improve the standards of treatment and in turn improve the quality of life of psoriatic patients. Only very few studies have gone through this. The aim is to study the different clinical manifestations, aggravating factors, severity and most common presentations among the psoriasis patients presenting to the Dermatology OPD of Government Medical College, Kottayam.

MATERIALS AND METHODS

This is a descriptive study conducted over a period of two months in the Department of Dermatology and Venereology, Government Medical College. The study was conducted with a semi-structured interview schedule recording history, examination, PASI score and diagnosis. The data so obtained was entered in Microsoft Excel and analyzed using SPSS software.

RESULTS

30.5% of the study sample had a history of aggravation of disease with seasonal variations (Summer) and 25.6% showed multifactorial aggravation. 17.1% had a family history of psoriasis. 87.8% had localized lesions. 92.7% presented with plaques. The most common type was chronic plaque (36.6%). As per PASI, 56% had mild, 22% each had moderate and severe psoriasis.

CONCLUSION

Chronic plaque psoriasis is the most common clinical type and most people present at the mild stage of the disease. Moderate and severe forms can be reduced by avoiding the aggravating factors. Planning appropriate treatment can significantly improve the quality of life of psoriasis patients.

KEY WORDS

Psoriasis, PASI, Arthritis.

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BACKGROUND

Psoriasis is, of no doubt, a dermatological entity, but its effects are much deeper than skin. It has a prevalence of 0.6-4.8% around the world.¹ Due to the association with several other diseases and concurrent illnesses, called comorbidities, psoriasis is considered as a systemic disease.² Psoriasis patients have a higher prevalence of metabolic syndromes as well as its individual components (Diabetes mellitus, abdominal obesity, dyslipidaemia, hypertension³) when compared to general population⁴ and the prevalence increases with severity and duration.⁵ The complex aetiology of the disease includes both genetic and environmental factors like trauma [Koebner's phenomenon], seasonal variations [Winter], UV light, infections (Caused by haemolytic

streptococci), drugs [NSAIDs, β -blockers, Li salts, antimalarials], stress, alcohol, smoking and HIV and dietary factors.^{6,7}

Rapid epidermal proliferation and dermal capillary derangements occur in psoriasis.⁸ The classical lesions are well circumscribed, itchy, salmon pink papules/plaques with silver white loosely adherent dry scales.⁹ The most common sites involved are the elbows, knees, scalp, lumbo-sacral skin, palms and soles.¹⁰ The most common site of involvement are palms according to a hospital based study conducted in four zones of India.¹¹ Yellowish discolouration and onycholysis of the nail at the free/lateral edges may also be seen along with subungual hyperkeratosis, thickening or grooving of the nail.¹² Psoriatic arthritis is a multigenic autoimmune disease that involves synovial tissue, enthesial sites and skin, that may result in significant joint damage.^{13,14}

The different types are Chronic plaque psoriasis/Psoriasis vulgaris (90% of total cases), Inverse/Flexural/Sebopsoriasis, Guttate psoriasis (Drop shaped), Palmar and Plantar psoriasis,¹⁵ Nail psoriasis, Rupoid, Elephantine and Ostraceous psoriasis, Pustular psoriasis, Exfoliative/Erythrodermic psoriasis,¹⁶ Psoriatic Arthritis. Psoriasis Area Severity Index (PASI) is the gold standard for assessing extensive psoriasis and its response to any therapeutic Regimen.¹⁷

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- PASI ranges from 0-72.
- PASI <7--→ mild
- PASI 7-15--→ moderate
- PASI >15--→ severe¹⁸

Psoriasis patients are more prone to anxiety, depression and stress.^{19,20} Because of the contrasting results obtained from previous studies and the paucity of data from the state, our aim was to arrive at a more consistent result and fill the gap in the existing knowledge regarding the clinical profile of psoriasis. Descriptive study design has been selected to effectively explain the dermatological variants and severity patterns of psoriasis.

MATERIALS AND METHODS

Study Design

This was a descriptive study conducted in the outpatient of Department of Dermatology and Venereology, Government Medical College, Kottayam from May 2017 to June 2017, including clinically diagnosed psoriasis patients. The sample size for the study was calculated as 82.

Data Collection

After obtaining IRB clearance, a semi-structured interview questionnaire was prepared. Consecutive patients were selected while we excluded the ones on immunosuppressant therapy. Consent was taken and a detailed history was taken. Dermatological examination was done to find out the site, extend, morphology, borders, erythema, scaling, induration and distribution of the lesions. Severity was assessed according to the modified PASI scoring. Koebner's phenomenon, Auspitz sign, joint, nail and mucosal involvement were separately examined.

Statistical Analysis

The data so obtained was entered in Microsoft Excel and analysed using SPSS version 16.0. The frequencies and percentages were obtained for different variables. The relation between severity and different variables were analysed by forming cross tabs taking the chi-square test.

RESULTS

Majority of the study sample (46.3%) belonged to the age group 41-60 and 59.8% of them were males. 56.1% developed the disease after the age of 40 and 34.1% developed the disease between 12 and 40 years of age. Only 9.8% of them developed the disease before the age of 12.

In 30.5% seasonal variations aggravated the condition, while 26.8% of the patients did not report any aggravating factors. 25.6% showed multiple aggravating factors which means combinations of seasonal variations, trauma, diet, smoking, alcohol, drugs or pregnancy.

Only 17.1% had a history of similar illness in the family.

Lesions were localized in 87.8% and 12.2% had generalized lesions. 92.7% of the participants had plaques, 3.7% had macules, 2.4% had pustules and the rest had papules. 52.4% had lesions with ill-defined borders and 47.6% had well-defined borders.

The majority of people had lesions on head (Scalp or face) 42.7%, while 32.9% had lower limb lesions, 17.1 % had trunk involvement and only 7.3% had lesions on the upper limbs.

12.2% had axillary lesions, 19.5% had lesions on the palms, 26.8% had lesions on the soles and 28% had lesions on their nails. None of the participants of the study presented with oral mucosal lesions while 2.4% participants had lesions on their genitalia. 22% of the study sample had joint involvement (Psoriatic arthritis).

Types of Psoriasis

36.6% had Psoriasis vulgaris and 19.5% presented with nail psoriasis. 9.8% had plantar psoriasis, 4.9% had palmoplantar psoriasis and 2.4% had palmar psoriasis. 3.7% had pustular psoriasis and 1.2% had erythrodermic psoriasis.

Severity of Psoriasis as per PASI

56% (46/82) presented with mild psoriasis while 22% had moderate psoriasis and 22% presented with severe psoriasis. Head involvement (Scalp and face) predominated in mild disease (71.7%). Lower limb involvement is higher in both moderate and severe forms with 50% and 94.4% respectively. The difference in proportion of disease severity among different sites [trunk, head, upper limbs and lower limbs] is statistically significant with a Pearson chi-square value of 63.200 and a p value of 0.000.

Association of Severity and Joint Involvement

In severe form, 50% had joint involvement. This was statistically significant with a Pearson chi-square value of 10.689 and a p value of 0.005.

Table 1. Distribution of Different Aggravating Factors among the Study Population

Table 2. Distribution of Different Morphological Types of Psoriasis among the Study Population

Table 3. Distribution of Study Sample according to the Severity of Disease

Table 4. Distribution of Severity of Lesions according to Site of Lesions

Table 5. Distribution of Involvement of Joints and Severity

Figure 1. Clinical Picture of Psoriasis

Figure 2. Histopathological Picture of Psoriasis

DISCUSSION

Though the overall mortality from Psoriasis is minimal, the widely varying morphology of lesions, the unpredictable course and severity increases the morbidity among patients, thus affecting the quality of life.²¹

This study included 82 psoriasis patients, with a male to female ratio of 1.48:1. However Prakash BV *et al* in their study had a male to female ratio of 3:1, which showed a clear male preponderance, while studies conducted by Na SJ *et al* and Loo CH *et al* had a sex ratio of 1.2:1, almost in line with the data of this study.

56.1% of the participants of this study had late onset of psoriasis (Age>40 years) and nearly half (48.8%) presented with a chronic history of 1-10 years or more. Loo CH *et al* in 2014 obtained from their study in Malaysia that 54.7% had early onset disease (age<40 years). However, Dogra S *et al* found out that the peak age of onset in adults is in the 3rd & 4th decades of life, which is similar to the results of this study. This similarity may be attributed to similarities in genetic and environmental factors. A study done in Thai population Contrary to this study, stated that 65.2% had early onset psoriasis and 34.5 % had late onset psoriasis.²² The age of onset among males was 20 and teenage among females as per another hospital-based study in Seoul, but no such observation could be made from this study.

The most common variant of psoriasis in this study was chronic plaque psoriasis (36.6%), followed by nail psoriasis in 19.5%, palmar psoriasis in 2.4%, plantar psoriasis in 9.8% and pustular psoriasis in 4.9 %. Psoriatic arthropathy was seen in 21.9%. Erythrodermic variant was found in only one patient (1.2%). Chronic plaque psoriasis being the most common variant is agreed in most of the previous studies. No cases of guttate and inverse psoriasis were found in this study. A Malaysian study revealed a higher incidence (89.2%) of psoriasis vulgaris, others were erythrodermic, pustular and guttate. Chronic plaque psoriasis was found to be the most common variant in a north Indian study with more than 90% incidence, others were palmoplantar, pustular and recalcitrant. A study by Weigle *et al* also found that the most common variety was plaque psoriasis, while guttate, pustular and inverse psoriasis were also noted. The study by Hani AF

et al, also confirmed that the most common morphological variant was plaque psoriasis with red scaly plaques.

According to this study, the most common sites of involvement was the scalp (42.7%), lower limbs (32.9%), trunk (17.1%) and upper limbs (7.3%) in concordance with Burfield L *et al*. While according to a hospital based Indian study the most common site of involvement was the palms. Psoriatic lesions affecting the scalp, nails, palms and soles were described as difficult to treat according to another study.²³

Nail involvement was present in only 28% participants while a much higher incidence of nail involvement was observed by Choi J W *et al* in 2016 (85.5%) with 55.6% having pitting. Loo C H *et al* observed 28% nail involvement and Na SJ *et al* observed nail involvement in 26.4% subjects which are comparable with this study.

Joint involvement was present in 22% of the patients while a study by Dogra S *et al* in 2016 stated that there is significant risk of psoriatic arthritis in patients with plaque type psoriasis. Loo CH *et al* observed 14.7% patients with psoriatic arthritis while Choon SE *et al* found 34.7% joint involvement in their retrospective study done in 2014. A study by Kumar R *et al* found that of 8.7% patient with psoriatic arthritis 58% had symmetrical polyarthritis. According to a study by Reich A *et al* in 2014, the prevalence of psoriatic arthritis is 5-30%.

More than half of the patients (56.1%) presented with mild psoriasis (PASI<7) and 22% each presented with moderate and severe psoriasis. Loo CH *et al* in their study calculated that 41.7% patients had more than 10% body surface area involvement. Moderate to severe extent of involvement was observed in male patients with early onset psoriasis (Age<30 years). A study involving 127 psoriasis patients calculated the severity to be mild in 63% patients, almost similar to this study. PASI score was higher in those with scalp and nail involvement.²⁴ Aarti SS *et al* stated that 11.6% in their study presented with mild psoriasis, 44.2% each presented with moderate and severe types. The comparatively low percentages of severe forms of psoriasis in this study setting may be because it is an OP-based study.

This study was not able to find out a statistically significant association between severity and smoking or alcohol. But the mean PASI score of smokers were higher than that of non-smokers, while there was no association between severity and alcohol consumption according to the study conducted by Asokan N *et al*.

The study did not derive any significant relation between severity and duration of disease. Contrary to this, a positive correlation between severity & duration of disease as well as psychological variants (Depression, anxiety, stress) was established in a case control study 20.

26.8% partakers of this study had no aggravating factors while 30.5% had summer exacerbations, 12.1% had diet, 9.8% had trauma as aggravating the disease. Multiple aggravating factors which included smoking, alcohol intake and drugs along with the above factors were identified in 25.6%. No significant history of infections and HIV were recorded. Similar factors were associated with psoriasis as per a study conducted among the Caucasian population though infections and endocrine factors were also found to be aggravating factors by them.²⁵ Choon SE *et al* in their study observed that the common triggers were systemic steroids

(44%), pregnancy (16.6%), and URTI (15.6%), which is quite deviating from the results of this study. In another study from Malaysia, sunlight (46%), stress (31.1%), trauma (5.4%), food (4%), pregnancy (4%) and URTI (2.4%) were found to be the aggravating factors which is in line with this study though the contribution of stress and URTI was more.

A positive family history was obtained in 17.1% subjects. Na SJ *et al* and Choon SE *et al* obtained a higher positive family history than this study (26%) and 29% respectively. Malaysian study by Loo CH *et al* had a positive family history in 8.8% of subjects.

CONCLUSION

This descriptive study on the clinical manifestations and severity of psoriasis revealed certain significant findings. In this study setting, psoriasis is found to be more common in males and had late onset psoriasis. Aggravating factors vary widely among individuals. People with positive past history and/or family history especially have to be cautious regarding exposure to extremes of temperature, trauma, diet, smoking, alcohol, in order to prevent a possible exacerbation.

The most common variant was the chronic plaque psoriasis, while more than half of the subjects are at the mild stage of the disease with a PASI <7. Hence early diagnosis and treatment can effectively slow down the disease progression to severe forms. Involvement of difficult-to-treat sites like scalp, palms, soles and nails need to be dealt with seriously.

However, PASI was insufficient to assess the severity in case of pustular and palmoplantar psoriasis. Here other tools like DLQI need to be used, as there is significant reduction in the quality of life inspite of localized involvement.

Severity was found to be more in generalized lesions with ill-defined borders with joint involvement. But association of severity with other variables like age of onset, duration of disease, smoking, alcoholism etc. were found to be insignificant as obtained from this study. More case control studies are needed to accurately relate severity with other variables. Preferably further studies with larger sample sizes are needed so that limitations in the hospital setting may be avoided.

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