



## SOCIO DEMOGRAPHICS, CLINICAL PROFILE, RISK FACTORS AND CO MORBIDITIES OF PATIENTS WITH PSORIASIS ATTENDING A TERTIARY CARE HOSPITAL.

<b>Krishna Murthy C</b>	M.Sc – Medical Microbiology, (PhD) Junior Research Fellow- (Ph.D) Department of Microbiology CARE- Chettinad Academy of Research & Education
<b>Dr. M S Srinivasan*</b>	MD., DD Professor and HOD, Department of Dermatology, CARE- Chettinad Academy of Research & Education *Corresponding Author
<b>Dr. Priyadarshini Shanmugam</b>	MBBS., MD., Ph.D Professor and HOD Department of Microbiology CARE- Chettinad Academy of Research and Education

**ABSTRACT** **INTRODUCTION:** Psoriasis is a chronic inflammatory disease of skin usually presented with demarcated chronic erythematous plaques. The study aims is to review the clinical profile, demographic and behavioural risk factors of patients with psoriasis attending a tertiary care hospital.

**METHODS:** A cross-sectional study conducted on psoriasis patients attending the department of dermatology at Chettinad Hospital and Research Institute over 3 years period from August 2015 to July 2018.

**RESULTS:** Among 228 patients with psoriasis, 93 were males and 135 were females. Majority of the patients were seen in the age group of 31-40 years (n= 62). 173 patients had Type I psoriasis and 55 patients had Type II psoriasis Only 53 patients (23.24%) had a family history of Psoriasis. The most common clinical presentation was Psoriasis vulgaris, 51.8% (n= 118).

**Conclusion:** This study is small effort and a large population based studies will help to establish the disease burden.

**KEYWORDS :** Psoriasis, Risk factors, Co morbidities, Demographics.

### INTRODUCTION:

Psoriasis is a chronic inflammatory disease of skin usually presented with demarcated chronic erythematous plaques. It is covered with silvery white scales.<sup>1,2,3</sup> The cause of psoriasis is a complex process. It is due to aberrant immune response occurs in the skin which is modified by environmental stimuli (infections, skin trauma & medications) and genetic susceptibility.<sup>4</sup> The incidence of psoriasis shows geographic and ethnic variations. The prevalence is less in Japan and China than in Europe.<sup>5</sup>

The prevalence of psoriasis in India was reported at the range of 0.4 to 2.8%.<sup>6</sup> Psoriasis onset before the age of 40 years was reported approximately in 75% of patients.<sup>7</sup> Risk factors such as smoking, HIV infection, low humidity, stressful life events, drugs, obesity, trauma, streptococcal pharyngitis are associated with psoriasis.<sup>1,5,8,9</sup> There are numerous studies being conducted on various aspects of psoriasis. The aim of this study is to review the clinical profile, demographic and behavioural risk factors of patients with psoriasis attending a tertiary care hospital.

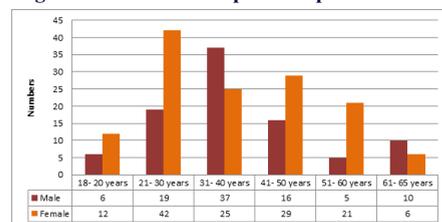
### MATERIALS AND METHODS:

This is a cross-sectional study conducted on outpatient psoriasis patients attending the department of dermatology at Chettinad Hospital and Research Institute over 3 years period from August 2015 to July 2018. The demographic details (gender, age, place of domicile, occupation, educational status), family history of psoriasis and risk behaviour information's (cigarette smoking, alcohol consumption), clinical parameters (age of onset, type of Psoriasis, PASI scoring, duration of the disease, allergic condition), seasonal variations and co morbidities of all patients were obtained in a questionnaire form. Severity and extent of the disease was estimated using Psoriasis Area and Severity Index (PASI). Mild Psoriasis and moderate to severe Psoriasis grouping was done for both type 1 and type 2 Psoriasis patients based on PASI score. All patients gave their written informed consent for investigation. The study was approved by Human Ethics Committee 12/IHEC/3-6. Clinical trial registry (CTRI/2017/11/010573) was done for the study.

### RESULTS:

A total of 228 patients (93 males, 135 females, mean age: 38.2 ± 14.1 years) were identified during the study period. Majority of the patients were seen in the age group of 31-40 years. The age wise distribution of psoriasis patient is given in figure 1

**Figure 1: Age wise distribution of psoriasis patients.**



Most of the patients has Psoriasis vulgaris, 51.8% (n= 118), followed by scalp psoriasis, 15.4% (n= 35), palmoplantar psoriasis, 19.7% (n= 45), guttate psoriasis, 12.7% (n= 29) and erythrodermic psoriasis, 0.4% (n= 1)

Based on the age of onset, 173 patients (73 males, 100 females) had Type I psoriasis (age of onset of <40 years) and 55 patients (20 males and 35 females) had Type II psoriasis (age of onset of >40 years). The average of disease onset of psoriasis was 33.6 ± 8.91 years and mean disease duration was 8.8 ± 6.91 years.

The psoriasis involvement by the patients includes elbow (86%), palm, sole and foot (45%), chest (18%), waist and buttocks (20%), knees (34%) and scalp (25%).

Based on the PASI score, among 228 patient, 108 had mild psoriasis (PASI <5) whereas 56 had moderate psoriasis (PASI 5-10) and 64 had severe psoriasis (PASI >10). The mean of PASI score was found to be 13.15 ± 8.41. Disease exacerbation was severe in 39% of the patients in winter season with reference to the larger size of the lesions along with high PASI scoring

The demographic characteristics of patients were given in Table 1. Out of 228 patients, 57 (25%) had a habit of smoking. Among them 35 (61.4%) were active smokers, 12 (21.1%) were chronic smokers and 10 (17.5%) were passive smokers. A total of 36 (15.8%) patients had a habit of alcohol consumption. Of them 29 (80.6%) and 7 (19.4%) were active and chronic drinkers respectively.

**Table 1: Demographic characteristics**

Characteristics	Psoriasis patients, n= 228 (%)
<b>Marital status</b>	
Married	162 (71.1)
Unmarried	66 (28.9)

<b>Educational Status</b>	
Illiterate	28 (12.3)
Upto school	103 (45.2)
University	97 (42.5)
<b>Place of domicile</b>	
Urban	70 (30.7)
Semiurban	96 (42.1)
Rural	62 (27.2)
<b>Occupation</b>	
Senior officials	19 (8.3)
Industrial workers	58 (25.4)
House wife	23 (10.1)
Fisherman	15 (6.6)
Farmer	4 (1.8)
Street vendors	19 (8.3)
Drivers	9 (3.9)
Skilled labours	24 (10.5)
Unskilled daily labours	20 (8.8)
Armed forces	2 (0.9)
Student	26 (11.4)
Business	9 (3.9)

Out of 228 psoriasis patients, 53 (23.24%) had a family history of Psoriasis (maternal and paternal side) and 175 (76.9%) had no family history of psoriasis.

Nearly 141 patients were found to be allergic food and others. Among them, 14% were allergic to brinjal (n=32). Others include dry fish, 11.8% (n=27), oily items, 2.6% (n=6), dust and pollen, 7.9% (n=18), chicken, 9.2% (n=21) and cat and dog dander, 3.5% (n=8)

Psoriasis patients reported having co morbidities such as arthritis (22%), diabetes (10%), blood pressure (7%), cardiovascular disease and hyperthyroidism (2%) each.

#### DISCUSSION:

In this study, we describe psoriasis patients seen at a tertiary care hospital over a period of 3 years. The mean age of onset in our series of patients was 38.2±14.1 years. Study conducted by Amer et al,<sup>10</sup> reported a somewhat higher mean age of onset. In our study the most common clinical type was Psoriasis vulgaris (51.8%), which is concordance to a study conducted by Bedi et al., 1995.<sup>11</sup>

In our study most of the patients had Type I psoriasis (75.9%) which is same as the study conducted by Chan et al.<sup>12</sup> A total of 23.2% of our patients had a family history of psoriasis. The similar finding was seen in other studies.<sup>13,14</sup>

Elbow involvement in our patients was 86%, while another study from Iran has reported 73% frequency.<sup>15</sup> Another study by Kaur et al.<sup>16</sup> reported the most common site of involvement is scalp (25%), followed by leg (20.6%) and arms (11.7%). According to PASI, our study showed 108 had mild psoriasis (PASI <5) whereas 56 had moderate psoriasis (PASI 5-10) and 64 had severe psoriasis (PASI >10). A study by Gopal et al,<sup>17</sup> found 3% of the patients had mild psoriasis (PASI <3), 55% of patients had psoriasis of moderate severity (PASI 3-10) whereas, 42% had severe type (PASI >10)

Lifestyle behaviours such as cigarette smoking and alcohol consumption were more common in psoriasis patients compared with patients without psoriasis. These behaviours may exacerbate the disease.<sup>18</sup> Increased ingestion of alcohol is a triggering factor of psoriasis and smoking increases the onset of the disease.<sup>19</sup>

In our study 25% of patients reported smoking, in which majority of our sample (61.4% were active smokers, 21.1% were chronic smokers and 17.5% were passive smokers). A study conducted by Baeta et al,<sup>20</sup> reported 20.5% were current smokers, 30% were past smokers. The association between psoriasis and smoking is also based on the changes in the patient's quality of life.<sup>21</sup>

Considering alcohol intake, among our patients, only 15.8% reported habit of alcohol consumption. Another study found the association between psoriasis and alcohol abuse with an odds ratio 2.78.<sup>22</sup> Qureshi et al<sup>23</sup> describes the odds of developing psoriasis in alcoholic patients is 1.7 times.

In our study patients with psoriasis had co morbidities such as arthritis, diabetes, blood pressure, cardiovascular disease and hyperthyroidism.

A similar result was found in a study conducted in USA high prevalence of cardio vascular disease (38.2%), diabetes (11.4%) was observed in Psoriasis patients.<sup>24</sup> A study conducted from Malaysia showed diabetes was seen in patients with psoriasis.<sup>12</sup>

#### CONCLUSION:

This study describes the socio demographics, clinical profile, risk factors and co morbidities in patients with psoriasis. More epidemiological studies need to be done further for the better understanding of the disease and development of health policies. This study is small effort and a large population based studies will help to establish the disease burden.

**ACKNOWLEDGEMENT:** We thank Prof. Dr. R. Murugesan (Director- Research, Chettinad Academy of Research and Education) for his invaluable suggestions and support during the course of our work.

#### REFERENCE:

1. Raychaudhuri, S. P., & Gross, J. (2000). A comparative study of pediatric onset psoriasis with adult onset psoriasis. *Pediatric dermatology*, 17(3), 174-178.
2. Luft, F. C. (2005). Light shed on the common skin scourge, psoriasis. *Journal of Molecular Medicine*, 83(12), 933-934.
3. Schon MP and Boehneke WH. (2005). Psoriasis. *N. England. Journal of Medicine*, 35 (2), 1899-1912.
4. Takeshita, J., Grewal, S., Langan, S. M., Mehta, N. N., Ogdie, A., Van Voorhees, A. S., & Gelfand, J. M. (2017). Psoriasis and comorbid diseases: epidemiology. *Journal of the American Academy of Dermatology*, 76(3), 377-390.
5. Chandran, V., & Raychaudhuri, S. P. (2010). Geoeidemiology and environmental factors of psoriasis and psoriatic arthritis. *Journal of autoimmunity*, 34(3), J314-J321.
6. Dogra, S., & Yadav, S. (2010). Psoriasis in India: Prevalence and pattern. *Indian Journal of Dermatology, Venereology, and Leprology*, 76(6), 595.
7. Zhang, X., Wang, H., Te-shao, H., Yang, S., & Chen, S. (2002). The genetic epidemiology of psoriasis vulgaris in Chinese Han. *International journal of dermatology*, 41(10), 663-669.
8. Raychaudhuri, S. P., & Farber, E. M. (2001). The prevalence of psoriasis in the world. *Journal of the European Academy of Dermatology and Venereology*, 15(1), 16-17.
9. Reveille, J. D., & Williams, F. M. (2006). Rheumatologic complications of HIV infection. *Best Practice & Research Clinical Rheumatology*, 20(6), 1159-1179.
10. Ejaz, A., Suhail, M., & Iftikhar, A. (2016). Psoriasis in Pakistani population: Associations, comorbidities, and hematological profile. *Journal of Pakistan Association of Dermatology*, 23(1), 42-46.
11. Bedi, T. R. (1995). Clinical profile of psoriasis in North India. *Indian Journal of Dermatology, Venereology, and Leprology*, 61(4), 202
12. Chan, Y. C., Lee, K. Q., Palanivelu, T., & Tan, W. C. (2015). Clinical profile, morbidity and outcome of adult patients with psoriasis at a district hospital in Northern Malaysia. *Med J Malaysia*, 70(3), 177.
13. Guðjónsson, J. E., Valdimarsson, H., Kárason, A., Antonsdóttir, A. A., Rúnarsdóttir, E. H., Gulcher, J. R., & Stefánsson, K. (2002). HLA-Cw6-positive and HLA-Cw6-negative patients with psoriasis vulgaris have distinct clinical features. *Journal of investigative dermatology*, 118(2), 362-365.
14. Chularojanamontri, L., Kulthanan, K., Suthipinittham, P., Jiamton, S., Wongpraparut, C., Silpa-Archa, N., & Sirikuddat, W. (2015). Clinical differences between early-and late-onset psoriasis in T hai patients. *International journal of dermatology*, 54(3), 290-294.
15. Moghaddassi, M., Shahram, F., Chams-Davatchi, C., Najafzadeh, S. R., & Davatchi, F. (2009). Different Aspects of Psoriasis Arthritis: Analysis of 150 Iranian Patients. *Archives of Iranian medicine*, 12(3), 279-283.
16. Kaur, I., Kumar, B., Sharma, K. V., & Kaur, S. (1986). Epidemiology of Psoriasis in a Clinic from North India. *Indian journal of dermatology, venereology and leprology*, 52(4), 208-212.
17. Gopal, M. G., Talwar, A., Sharath Kumar, B. C., Ramesh, M., Nandini, A. S., & Meena, H. B. (2013). A clinical and epidemiological study of psoriasis and its association with various biochemical parameters in newly diagnosed cases. *Journal of clinical and diagnostic research: JCDR*, 7(12), 2901.
18. Guenther, L., & Gulliver, W. (2009). Psoriasis comorbidities. *Journal of cutaneous medicine and surgery*, 13(5 suppl), S77-S87.
19. Naldi, L., Parazzini, F., Brevi, A., Peserico, A., Fornasa, C. V., Grosso, G., ... & Galbiati, G. (1992). Family history, smoking habits, alcohol consumption and risk of psoriasis. *British Journal of Dermatology*, 127(3), 212-217.
20. Baeta, I. G. R., Bittencourt, F. V., Gontijo, B., & Goulart, E. M. A. (2014). Comorbidities and cardiovascular risk factors in patients with psoriasis. *Anais brasileiros de dermatologia*, 89(5), 735-744.
21. Armstrong, A. W., Armstrong, E. J., Fuller, E. N., Sockolov, M. E., & Voyles, S. V. (2011). Smoking and pathogenesis of psoriasis: a review of oxidative, inflammatory and genetic mechanisms. *British Journal of Dermatology*, 165(6), 1162-1168.
22. Sommer, D. M., Jenisch, S., Suchan, M., Christophers, E., & Weichenthal, M. (2007). Increased prevalence of the metabolic syndrome in patients with moderate to severe psoriasis. *Archives of dermatological research*, 298(7), 321.
23. Qureshi, A. A., Dominguez, P. L., Choi, H. K., Han, J., & Curhan, G. (2010). Alcohol intake and risk of incident psoriasis in US women: a prospective study. *Archives of dermatology*, 146(12), 1364-1369.
24. Kimball, A. B., Leonardi, C., Stahle, M., Gulliver, W., Chevrier, M., Fakharzadeh, S., & PSOLAR Steering Committee. (2014). Demography, baseline disease characteristics and treatment history of patients with psoriasis enrolled in a multicentre, prospective, disease-based registry (PSOLAR). *British Journal of Dermatology*, 171(1), 137-147.