IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A Case Study On Prevalence And Medication Adherence To Treatment In Patients With Psoriasis

Corresponding Author : Dr. chiramana Hemalatha Pharm –D, Dr. Narreddy monica reddy , Kongi Kavyasudha M.Pharm , Dr. chiramana sailaja

[1] Faculty- Assistant Professor, in Rathnam Institute of Pharmacy, Pidathapolur, Nellore. Pharm.D, from CES College of Pharmacy Chinnatekur, Kurnool, Andhra Pradesh, INDIA.

[2] Clinical pharmacist – sri sai krupa hospital , proddatur ,kadapa. Pharm.D, from CES College of Pharmacy Chinnatekur, Kurnool, Andhra Pradesh, INDIA.

[3]Faculty- Associate Professor of Pharmacology, Rathnam Institute of Pharmacy, Pidathapolur, Nellore. M.Pharm. in Pharmacology, Sree Venkateshwara University, Tirupati,INDIA.

[4]Clinical pharmacist - AIMS super speciality hospital , poga totha , Nellore . Pharm –D from Ratnam Institute of Pharmacy, Pidathapolur, Nellore.

Abstract

This case study is the prevalence and medication adherence in patients with psoriasis. The objective of this case study is to determine the prevalence of psoriasis and assess the impact of clinical pharmacists on improving medication adherence in patients with psoriasis. This is a cross-sectional observational study. They were advised to come after one month after the initiation of therapy for follow-ups. The severity of psoriasis was evaluated through PASI score and Medication adherence using the MARS questionnaire before initiation of the treatment and after one month of therapy. PASI is used to quantitative rating score to the severity of psoriatic lesions based on area spreading and patches appearance. Among the study population(N=50), the severity of psoriasis is differentiated based on the score as mild, moderate, and severe. The mean and standard deviation for the baseline PASI score is 8.266±5.702652 and the mean for the first follow-up PASI score is 5.428±3.685107. Most of the patients received Cetirizine 47(94%), vitamin A&D 39(78%), Betamethasone cream 32(64%) and Calcium 30(60%). MARS score has compared baseline and first follow-up. The mean and the standard deviation of the MARS score at baseline was 4.74±0.715821 and at the first follow-up was 7.08±1.309045. A higher score indicates higher medication adherence. This indicates that medication adherence has increased at the first follow-up. The study concluded the participants improved the outcomes and influenced greater health benefits in the long-term management of ineradicable diseases like psoriasis. There is a need for clinical pharmacists to improve the affirmative health of the psoriasis patient.

Key words : Medication adherence , psoriasis , Psoriasis area and severity index , follow ups

INTRODUCTION:

Psoriasis is a common chronic inflammatory skin disorder categorized by repeated worsening and remissions of solidified, reddened, and scaling patches. The clinical appearance of psoriasis may be cosmetically disfiguring and the disease may be physically and emotionally debilitating, especially for patients with severe disease. Psoriasis is occurred due to unusual immune system against our body skin cells, resulting red and itchy patches with white or silver scale appeared on the skin [1] .

Epidemiology:

According to various hospital-based studies, the extent of psoriasis in India differs from 0.44 to 2.8%, and it is more common in males than females[2].

Etiology:

The etiology of this disease is multi-factorial that is the union of both environmental, as well as a genetic factor triggering the immune histological changes noticed in the skin . Despite efforts to understand , the root cause of psoriasis is still unclear.

Genetic factors :

A number of genetic loci have been piopointed by comprehensivegenome searches and two genetic hotspots have been consistently confirmed ; PSORS1 on chromosome 6, within the primary immune compatability region , and PSORS2 on chromosome 17q, PSORS1 accounts for an estimated 30-50% of the genetic contribution to psoriasis[3].

Exogenous trigger factors :

Alcohol , smoking , stress , Medications: Some treatments can make psoriasis worse. These include: Lithium, which treats bipolar disorder and other mental illnesses[4] .High blood pressure and heart medicines, including propranolol and other beta blockers, ACE inhibitors, and quinidine .Antimalarial medicines, including chloroquine, hydroxychloroquine and quinacrine , Indomethacin (Indocin), which treats inflammation . Other like NSAIDS, tetracycline and interferon's and steroid with drawl , HIV ,Injurious to the skin I,e skin scratches , sun burns [5]etc., sometimes the weather may trigger a flare.

Patho physiology :

In psoriasis observing immune cell dysregulation ,in that Tcells activated particularly CD4+ and CD8+ Tcells resulting abnormal immune activation and inflammation[6][7] . Inflammation process following activates pro inflammatory cytokines , such as interleukins ,tissue necrosis factor enhance the inflammation process further and promotes skin cell proliferation and angiogenesis [8]. Apart of inflammation ,observing keratinocytes activation in the epidermis and abnormal differentiation of cells leading scaly plaques [9].

Types of psoriasis and manifestations:

1. Plaque psoriasis : red and silver itchy and painful scale patches present on knees , scalp , elbow[10][11].
2. Guttate psoriasis: small spots 1-10mm on the skin present on trunk ,arms and leg[12].

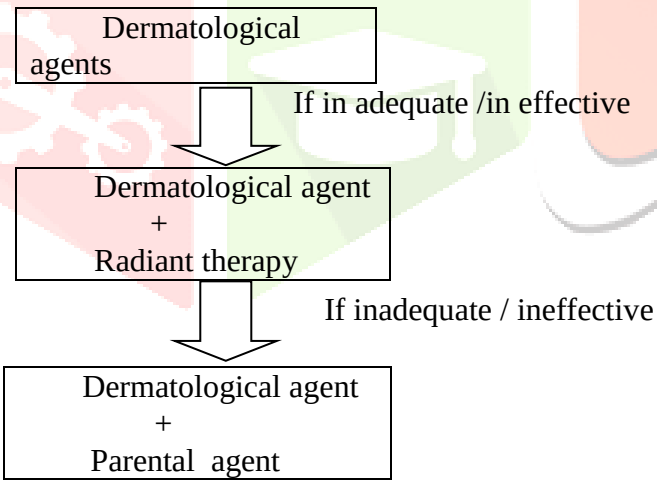
3. inverse psoriasis : red itchy and painful patches in skinfolds i.e armpits , groin , under the breast[14].
4. Pustular psoriasis: white , pus filled painful blisters on the skin present on hands or feet[15].
5. Erythrodermic psoriasis : it is a rare type , fiery redness and scaling rashes present over the body[16] .
6. Nail psoriasis : thickening or separation of the nail from the nail bed, present on finger nails or toe nails [17].
7. Scalp psoriasis: red , painful and itchy scaly patches on the scalp [18].
8. Palmoplantar psoriasis: thick ,scalypatches on the palms of the hands or soles of the feet[19] .

DIAGNOSIS:

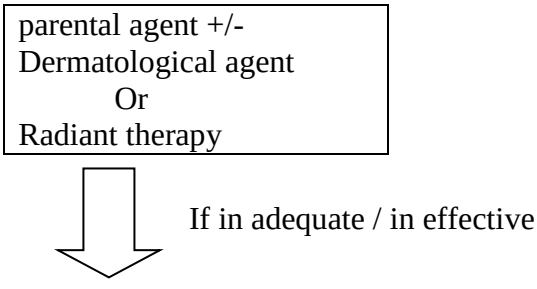
Psoriasis diagnosis involves examining the skin for red , scaly patches and order biopsies or blood tests to confirm the diagnosis. A thorough examination and medical history help doctors diagnose psoriasis [20] .

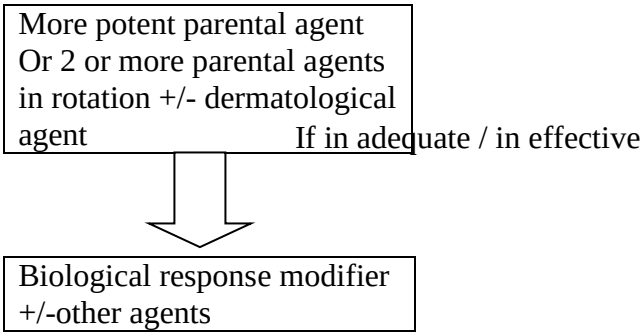
Treatment :

Treatment algorithm for mild and moderate psoriasis.



Treatment algorithm for moderate – severe psoriasis .





Apart of treatment we add moisturizers to get better results .

Topical therapy for psoriasis: it includes corticosteroids , coal thar products ,anthralin , vitamin –D3, analogues such as calcipotriol , retinoids , such as tazarotene , and topicalimmunomodulators such as tacrolimus , and pimecrolimus[21].

Systemic therapy for psoriasis :

Oral agents include hydroxyurea sulfasalazine , mycophenolate mofetil ,acitretin , ,cyclosporine , azathioprine , tacrolimus , acitretin , methotrexate.

Parenteral agents include the biologic response modifier alefacet , efalizumab ,etanercept ,infliximab[22] .

Methodology :

The study was started with the selection of the subjects rooted on inclusion criteria and exclusion criteria followed by collection of all the required parameters of the patients using a self-prepared structural patient data collection draft which includes patient demographic details, past medical history, Chief complaints, PASI score, past medication history, personal habits, allergies, family history, laboratory investigations, Diagnosis, Treatment, Follow Up, MARS score**.**

All the participants were questioned for having any adverse effects (AE) during on treatment period. They were advised to come after one month after the initiation of therapy for revisit . During revisits, the participants were examined, Severity of psoriasis was evaluated through PASI score (before and after the treatment)[23] and any AEs were noted. Medication adherence was analyzed by using the MARS [24]questionnaire before initiation of the treatment and after one month of therapy. MARS comprises ten questions. For questions 1-6 and 9-10, No response is indicative of adherence and is coded as 1.For questions 7 and 8, Yes response is indicative of adherence and is coded as 1.Higher score indicating better medication adherence. The English version of MARS was used for this study . The questions were detailed in their respective languages either hindi or telugu and responses were drew out. Based on the sub scale scores given scoring to the each individual patient . The Psoriasis Area and Severity Index (PASI)[25] is a quantitative ranking score for measuring the severity of psoriatic lesions rooted on area spreading and patches appearance. In calculating the PASI, severity is concluded by segregated the body into four regions: head, upper limbs, trunk and lower limbs, that account for 10%, 20%,

30%, and 40% of the total skin surface area (TSSA). It produces a numeric score comprising from 0 to 72. In general, a PASI score of <5 is considered as mild, and a score of 5 to 10 is considered moderate disease, and a score over 10 is considered severe.

Sampling:

A total number of 50 Psoriasis patients were assessed by the Dermatologist; patients were selected based on their inclusion and exclusion criteria of the study.

Patient eligibility criteria:

Inclusion Criteria:

• Age greater than 16

• Attendees who are anguish with psoriasis.

• Only Male attendees

• Attendees with known case of psoriasis

• Signing permission form

Exclusion Criteria:

• Female attendees

• Pregnancy & lactating mothers

• Not signing permission form

Materials:

Instruments:

• Patient data collection draft

• PASI (Psoriasis Area and Severity Index) scale

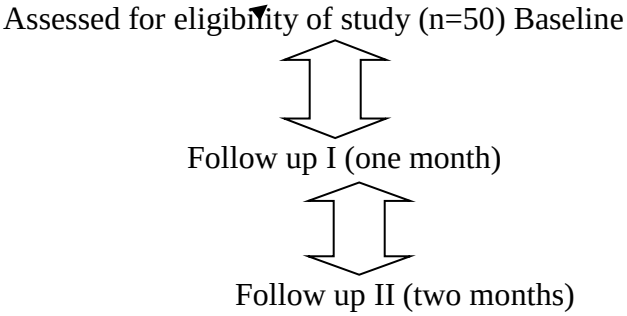
• MARS (Medication Adherence Rating Scale)

• Micro medex.

Steps followed for carrying out this project :

1. Evaluation of literature
2. Study plan
3. Designing draft, and MARS questionnaire, ICF
4. Developing of protocol
5. Permissions
6. Patient recruitment rooted on inclusion criteria
7. Data collection
8. Data compilation and analysis

Study design:



Data Analysis :

The statistical analysis was carried out by using microsoft excel. The baseline data like demography, severity (PASI score), medication adherence (MARS score) and prevalence were subjected to descriptive statistical analysis and expressed as mean ± SD and percentages.

Results:

Prevalence:

In our study, we have collected the prevalence data in dermatology department outpatient. We have conducted this study for a period of six months and gathered the data of the number of patients attending the hospital visit. A total of n=8720 patientsattended the dermatology department and out of them 50 patients were diagnosed to have Psoriasis. The prevalence was estimated to be 0.57%. This was shown in Table

Table Prevalence of psoriasis:

Total no of patients	No. of patients with Psoriasis	Percentage
8720	50	0.57%

Age wise distribution of total population:

In age-wise distribution of population involved in this study (N=50) major age group involved are 46-60 years 20 patients (40%) followed by 31-45 age group are 11 (22%) and >61years group of 11 patients (22%) and followed by 16-30 age group of 8 patients (16%).

Table and figure provided the details of patient's age distribution among 50 patients involved in this study with psoriasis the highest age group was 46-60years with 20(40%)patients.

Age wise distribution of total population:

In age-wise distribution of population involved in this study (N=50) major age group involved are 46-60 years 20 patients (40%) followed by 31-45 age group are 11 (22%) and >61years group of 11 patients (22%) and followed by 16-30 age group of 8 patients (16%).

Table and figure provided the details of patient's age distribution among 50 patients involved in this study with psoriasis the highest age group was 46-60years with 20(40%)patients.

Age wise Distribution of total population :

Age	Male	%
16-30	8	16%
31-45	11	22%
46-60	20	40%
>61	11	22%

Co-morbid conditions:

In this study population(N=50), Hypertension was the most common co-morbid condition seen in 11 patients (22%) and Diabetes mellitus was seen in 3 patients (6%).

Table and figure provided the details of co-morbid conditions among total population of this study. Hypertension is present in more number patients .

Co-morbid conditions among the total population :

Co-morbid condition	No of patients	%
Hypertension	11	22
Diabetes mellitus	3	6
None	36	72

Employment Status in Total Population

In our study population (N=50), 22(44%) were employed, 16 (32%) were unemployed.

The most of the patients were employed in this study.

Study groups based on employment status:

Occupational status	No of patients	%
Employed	28	56
Un employed	22	44

Personal habits in total population:

In this population(N=50), 4(8%) patients were smokers, 5(10%) patients were alcoholic, 5(10%) patients were both alcoholic + smoker and remaining 36(72%) patients does not have any habits.

Personal habits among the total population:

Personal Habit	No of patients	%
Smoker	4	8
Alcoholic	5	10
Smoker+alcoholic	5	10
None	36	72

Types of Psoriasis:

In this study population(N=50), 18(36%) patients has Chronic plaque psoriasis,followed by 18(36%) patients has Psoriasis vulgaris, 7(14%) patients has palmoplantar psoriasis, 2(4%) patients has sebo psoriasis, 1(2%) patient has guttate psoriasis, 1(2%)patient has nail psoriasis, 1(2%) patient has scalp psoriasis, 1(2%) patient has erythrodermic psoriasis and 1(2%) patient has generalized plaque psoriasis.Chronic plaque psoriasis and Psoriasis vulgaris were the most common types seen in the patients.

Types of Psoriasis:

Types of psoriasis	No of patients	%
Chronic plaque psoriasis	18	36%
Psoriasis vulgaris	18	36%
Palmoplantar psoriasis	7	14%
Sebo psoriasis	2	4%
Guttate psoriasis	1	2%
Nail psoriasis	1	2%
Scalp psoriasis	1	2%
Erythrodermic psoriasis	1	2%
Generalized plaque psoriasis	1	2%

PASI score comparison among the total population:

PASI score has been calculated at baseline and first follow-up.

PASI score at Baseline and first follow up:

In this population(N=50), the severity of psoriasis is differentiated based on the score as mild, moderate and severe. At baseline, 17(34%) patients have mild disease, 17(34%) has moderate disease and 16(32%) patients have severe disease. At first follow-up, 26(52%) patients have mild disease, 18(36%) has moderate disease and 6(12%) patients have severe disease. This was shown in table .

Baseline and first follow up PASI scores differentiation :

Severity	At baseline	At first follow up
Mild (0-5)	17	26
Moderate(5-10)	17	18
Severe(>10)	16	6

Mean of Baseline and first follow-up PASI score:

The mean and standard deviation for baseline PASI score is 8.266±5.702652 and the mean for first follow-up PASI score is 5.428±3.685107. Mean PASI score has been decreased at first follow-up which indicates the decrease in the disease severity. This was shown in table.

	Mean ± SD
Baseline	8.266± 5.702652
First follow up	5.428± 3.685107

Treatment profile of psoriasis in this population:

In this population(N-50), most of the patients received Cetirizine, vitamin A&D, Betamethasone cream and Calcium . Cetirizine was received by 47(94%) patients, vitamin A and D was received by 39(78%)patients, beta methasone cream was received by 32(64%) patients, calcium was received by 30(60%) patients, vitamin B complex was received by 24(48%) patients, LPF lotion was received by 21(42%) patients, methotrexate was received by 10(20%) patients, moyzen oil was received by 10(20%) patients, cefixime was received by 6(12%) patients, Pantoprazole was received by6(12%)patients and amoxyclav was received by 6(12%) patients. This was shown in

Table.

Drug	**No of patients received**	**%**
Methotrexate	10	20%
Folic acid	3	6%
Calcium	30	60%
Vitamin D3	8	16%
Cetrizine	47	94%
Betamethasone cream	32	64%
Vitamin Aand D	39	78%
Vitamin B complex	24	48%
LPF lotion	21	42%
Moyzen oil	10	20%
Cefixime	6	12%
Amoxyclav	5	10%
Pantoprazole	6	12%

MARS score comparison among the total population:

In this population, MARS score has compared at baseline and first follow-up. Mean and standard deviation of MARS score at baseline was 4.74±0.715821 and at first follow-up was 7.08±1.309045. Higher score indicates higher the medication adherence. This indicates that medication adherence has increased at first follow-up. This was shown in Table

	Mean± SD
Baseline	4.74± 0.715821
First follow up	7.08± 1.309045

Conclusion:

This study indicates the profoundly positive impact of clinical pharmacist measures on psoriasis management . The notable improvements in treatment outcomes and enhanced health benefits emphasize the essential role of clinical pharmacists in enhancing patient care . The continuity management of ineradicable diseases like psoriasis requires a multidisciplinary approach ,and our results highlights the important need for clinical pharmacists to address the un met needs of psoriasis patient .To further amplify health compliance in psoriasis patients , we propose that following studies investigate the complex relationships between social, cultural, and psychological factors . Interpreting these complex interactions will make health care providers to develop

more directed and effective initiatives .Furthermore, the impact of clinical pharmacist led initiatives on patient focused outcomes , such as quality of life and treatment adherence , will provide valuable perspectives in to the long term management of psoriasis.

REFERENCES :

1.JosephT. Dipiro, Robert L. Talbert, Gary C. Yes et al Pharmacotherapy, A pathophysiologic approach, 6th edition, Mc graw- hill pvt lmtd , chapter- 96, page no .1769-1784.

2.Sanjay K. Singh, Rajesh Kumar,"Incidence of psoriasis in India: a hospital-based study" Indian Journal of Dermatology, Volume: 65, Issue: 2, Pages no- 97-102 ,DOI: 10.4103/ijd.IJD-449-19 ,PubMed ID: 32153351.

3. James T. Elder, Alan Menter, "Genetic susceptibility to psoriasis: a review of the literature" Journal of the European Academy of Dermatology and Venereology ,Volume: 33 , Issue: 10, Pages no - 1935-1946 ,DOI: 10.1111/jdv.15579 ,PubMed ID: 31237090.

4. Jerry Bagel, David Cohen, Robert G "Exogenous factors triggering psoriasis: a review of the literature" Journal of Clinical and Aesthetic Dermatology ,Volume: 13, Issue: 7, Pages no: 10-12,

DOI- 10.1111/j.1365-2230.2020.03914 ,PubMed ID: 32342312 .

5. Mark G. Lebwohl, Warren R. Heymann, "Environmental triggers of psoriasis: a review of the current understanding" ,Journal of Investigative Dermatology , Volume: 139 ,Issue: 1 ,Pages: 24-31, DOI: 10.1016/j.jid.2018.08.034 ,PubMed ID: 30414844 .

6 . Jerry Bagel, David Cohen, Robert G. Phelps "The role of oxidative stress in psoriasis" Journal of Clinical and Aesthetic Dermatology ,Volume: 13 , Issue: 7 , Pages no: 13-15 ,DOI: 10.1111/j.1365-2230.2020.03915.x , PubMed ID: 32342313 .

7. Mark G. Lebwohl, Warren R. Heymann, "Oxidative stress and antioxidant defense in psoriasis" Journal of Investigative Dermatology ,Volume: 13, Issue: 1,Pages no: 24-31,DOI: 10.1016/j.jid.2018.08.034 , PubMed ID: 30414844 .

8. Alan Menter, Alice B. Gottlieb, "Fibroblast-derived factors in psoriasis pathogenesis" ,Journal of Investigative Dermatology ,Volume: 139 ,Issue: 1, Pages no: 32-38 DOI: 10.1016/j.jid.2018.08.035, PubMed ID: 30414845.

9.Adriana rendon and knut schakel "psoriasis pathogenesis and treatment" a research article of international journal of molecular sciences 2019.volume 20:1475.

10.Gulbahat sarac,and Tuba Tulay kora "A breif summary of clinical types of psoriasis " a review article published online 2016,june14.

11. Jerry Bagel, David Cohen, Robert G. Phelps,"Plaque psoriasis: a review of the literature" Journal of Clinical and Aesthetic Dermatology ,Volume: 13 ,Issue: 7 ,Pages no: 10-12 ,DOI: 10.1111/j.1365-2230.2020.03914.x ,PubMed ID: 32342312 .

12. Jerry Bagel, David Cohen, Robert G. Phelps "Inverse psoriasis: a review of the literature" ,Journal of Clinical and Aesthetic Dermatology ,Volume: 13 ,Issue: 7 ,Pages: 16-18 ,DOI: 10.1111/j.1365-2230.2020.03916.x , PubMed ID: 32342314 .

13. Jerry Bagel, David Cohen, Robert G. Phelps, "Guttate psoriasis: a review of the literature" , Journal of Clinical and Aesthetic Dermatology ,Volume: 13 ,Issue: 7 ,Pages no: 13-15 ,DOI: 10.1111/j.1365-2230.2020.03915.x ,PubMed ID: 32342313 .

14. G. Lebwohl, Warren R. Heymann, "Clinical features and treatment options for generalized pustular psoriasis" Journal of Investigative Dermatology ,Volume: 139 ,Issue: 1 ,Pages no: 24-31, DOI: 10.1016/j.jid.2018.08.034 ,PubMed ID: 30414844 .

15. Mark G. Lebwohl, Warren R. Heymann,,"Erythrodermic psoriasis: treatment options and outcomes" ,Journal of Investigative Dermatology , Volume: 139 , Issue: 1 ,Pages no: 39-45 ,

DOI: 10.1016/j.jid.2018.08.036 ,PubMed ID: 30414846 .

16. Mark G. Lebwohl, Warren R. Heymann, "Erythrodermic psoriasis: treatment options and outcomes" , Journal of Investigative Dermatology ,Volume: 139 ,Issue: 1 ,Pages no: 39-45 , DOI: 10.1016/j.jid.2018.08.036 , PubMed ID: 30414846 .

17 . Mark G. Lebwohl, Warren R. Heymann "Prevalence and clinical features of nail psoriasis: a systematic review" ,Journal of Investigative Dermatology ,Volume: 139 , Issue: 1 Pages no: 24-31,DOI: 10.1016/j.jid.2018.08.034 , PubMed ID: 30414844.

18. Alan Menter, Alice B. Gottlieb, "Histopathology of scalp psoriasis: a review of the literature" ,Journal of Investigative Dermatology ,Volume: 139 , Issue: 1 ,Pages no-32-38 ,DOI: 10.1016/j.jid.2018.08.035 ,PubMed ID: 30414845 .

19 Jerry Bagel, David Cohen, Robert G. Phelps,"Pathogenesis of palmoplantar psoriasis: a review of the literature" ,Journal of Clinical and Aesthetic Dermatology , Volume: 13 ,Issue- 7 ,Pages no: 13-15, DOI: 10.1111/j.1365-2230.2020.03915.x , PubMed ID: 32342313 .

20.Gottlieb, "The International Psoriasis Council consensus on psoriasis diagnosis" Journal of the American Academy of Dermatology, DOI -10.1016/j.jaad.2019.02.078 ,PubMed ID: 30880074 .

21. KD Tripathi MD, essentials of Medical Pharmacology 7th edition, jaypee brothers medical publishers (p) ltd, chapter 64, page no.891- 896 .

22. Alexander Nast, Andreas Pinter, Ulrich Mrowietz, "European S3-Guidelines on the systemic treatment of psoriasis vulgaris" Journal of the European Academy of Dermatology and Venereology ,Volume: 33 Issue: 10, Pages no -1935-1946 ,DOI: 10.1111/jdv.15579 ,PubMed ID-31237090 .

23..James T. Elder, Alan Menter, "Psoriasis Area and Severity Index (PASI): a review of the literature" Journal of Investigative Dermatology ,Volume: 140 , Issue: 1, Pages no - 42-49 ,

DOI: 10.1016/j.jid.2019.09.025 ,PubMed ID- 31843343.

24.. Jerry Bagel, David Cohen, Robert G."Medication Adherence Rating Scale (MARS): a review of the literature" Journal of Clinical and Aesthetic Dermatology ,Volume: 13 ,Issue- 7, Pages no -13-15, DOI-10.1111/j.1365-2230.2020.03915.PubMed ID- 3234231.

25. James T. Elder, Alan Menter, "Psoriasis Area and Severity Index (PASI): a review of the literature" , Journal of Investigative Dermatology ,Volume -140 , Issue -1 , Pages no- 42-49 , DOI: 10.1016/j.jid.2019.09.025 , PubMed ID -31843343 .