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## A PROSPECTIVE STUDY OF DRUG PRESCRIBING PATTERN IN PSORIASIS AT A TERTIARY CARE TEACHING HOSPITAL IN SOUTHERN ASSAM, INDIA

Dolly Roy, Neeraj Sinha\* and Bhaskar Gupta

Silchar Medical College & Hospital, Silchar - 788014, Assam, India.

### Keywords:

Drug, Psoriasis, Clobetasol, Methotrexate, Infliximab

### Correspondence to Author:

**Dr. Neeraj Sinha**

Post-Graduate Trainee,  
Silchar Medical College & Hospital,  
Silchar - 788014, Assam, India.

**E-mail:** [sinhaneeraj123@gmail.com](mailto:sinhaneeraj123@gmail.com)

**ABSTRACT: Background:** Environmental factors and genetics significantly impact the development of the chronic, inflammatory, debilitating, and proliferative skin disorder known as psoriasis. Erythematous plaques with distinct borders and silvery scales are signs of psoriasis. **Objectives:** This study aimed to study the pattern of drug use in psoriasis and to assess patient compliance. **Materials & Methods:** 96 patients were selected after they met the inclusion criteria. Microsoft Word and Excel were used to create graphs and tables, and statistical software called SPSS version 21 was used to analyze the data. **Results:** In most psoriasis patients, topical therapy helped cause and maintain the remission of lesions. Plaque psoriasis was the most common psoriasis. Scaly plaque, redness and itching were their most frequent symptoms. Glucocorticoids, either alone or in conjunction with other topical medicines like salicylic acid, calcitriol, coal tar, and a variety of emollients, were the drugs most frequently used for topical therapy. With the exception of formulations containing coal tar, patient compliance was good across the board for the majority of the participants. More than 96.87% of research participants demonstrated good compliance at week four and 98.95% at week eight topical medications. **Conclusions:** Thus, it was found in the current study that the majority of psoriasis patients respond well to topical treatments, and extra systemic and/or phototherapy may only be needed for severe cases of persistent plaque psoriasis.

**INTRODUCTION:** Erythematous plaques with distinct borders and silvery scales are signs of psoriasis. The quality of life of psoriasis sufferers is significantly impacted, and it causes significant psychological disability<sup>1, 2</sup>. Today, several systemic drugs are available to treat severe psoriasis, and extremely rare life-threatening symptoms are far less frequent than they were in the past<sup>3</sup>. Psoriasis affects between 0.1 and 3% of people worldwide<sup>4</sup>. Between 0.44 and 2.8% of Indians have psoriasis<sup>5</sup>.

Up to 3% of the body's surface is affected by mild psoriasis, 3% to 10% by moderate psoriasis, and > 10% by severe psoriasis<sup>6</sup>. The severity of the ailment is determined using the PASI score, a numerical grading method for psoriasis. Based on how much skin is damaged and how the plaques look, it determines the severity of the psoriatic lesions<sup>7</sup>.

To get the PASI score, medical practitioners evaluate the plaques' thickness, degree of redness, and scaling<sup>8</sup>. According to the most recent American Academy of Dermatology recommendations, a PASI score of 10 or more indicates moderate to severe illness<sup>9</sup>. The potential for job absenteeism, decreased productivity, and ongoing medical expenses impose an economic burden that is cause for concern<sup>10</sup>.

<p><b>QUICK RESPONSE CODE</b></p> 	<p><b>DOI:</b> 10.13040/IJPSR.0975-8232.14(10).4707-17</p> <hr/> <p>This article can be accessed online on <a href="http://www.ijpsr.com">www.ijpsr.com</a></p> <hr/> <p>DOI link: <a href="https://doi.org/10.13040/IJPSR.0975-8232.14(10).4707-17">https://doi.org/10.13040/IJPSR.0975-8232.14(10).4707-17</a></p>
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The most prevalent type of psoriasis in all populations is plaque psoriasis, which impacts 85 to 90% of those with psoriasis globally<sup>11</sup>. Pustular psoriasis affects only 1-3 percent of patients<sup>12</sup>.

Biologics are now being frequently used to treat moderate-to-severe psoriasis<sup>13</sup>. Biologics are much more expensive, even if they are safer and more efficient than systemic medications like acitretin and methotrexate<sup>14</sup>.

Nonadherence to medication is one of the main reasons for treatment failure, and it can raise the expense of pharmaceuticals and health care, increase hospital admissions and increase doctor visits<sup>15</sup>. Numerous systemic and topical therapies are now available for psoriasis. The severity of the disease, patient preference (including cost and convenience), effectiveness, relevant comorbidities, and assessment of the individual patient response are some of the different factors used to choose the treatment methods<sup>3</sup>.

Promoting responsible use of these substances is the primary objective of drug use research. It is difficult to suggest activities to enhance prescribing practices without completely understanding how drugs are prescribed and used<sup>16</sup>.

The current study was conducted in a tertiary care teaching hospital to evaluate patient compliance and analyze the drug usage pattern in treating psoriasis.

## MATERIALS & METHODS:

**Study Design:** This study was an observational, prospective and hospital-based cross-sectional study.

**Study Period:** The period covered by this study was from 1st June 2021 to 31st May 2022.

**Inclusion Criteria:** Patients who visited the dermatology outpatient clinic between June 1st, 2021, and May 31st, 2022. Patients above the age of 18 of both sexes. The same patients visited the outpatient department during the trial with a new dermatological disease. Patients who consent to routine follow-up appointments.

**Exclusion Criteria:** Patients already receiving psoriasis treatment and visiting the outpatient

department for review. A patient who experienced any adverse drug reaction after receiving treatment outside of the dermatology unit.

**Study Procedure:** After getting permission from the Institutional Human Ethics Committee permission (IHEC), with No. SMC/14845, the study was conducted in the Dermatology department. Patients who met the inclusion and exclusion criteria and visited the institution's outpatient dermatology clinic were included in the study. After properly explaining the study protocol to each subject to their satisfaction in English and their native tongue, each subject was provided with written informed consent. All study participants were kept anonymous, confidential, and professional secrecy was maintained. After the doctor's consultation, the patient's prescription information was entered in the case record form. A comprehensive clinical assessment was conducted to:

- A. Analyze the disease's pattern, intensity, duration, and natural course.
- B. Determine whether there is any underlying illness, systemic involvement, or psoriasis-related problems.
- C. The pattern of drug therapy.
- D. The Psoriasis Area Severity Index (PASI) score was used to determine the severity of psoriatic lesions. By % decrease in PASI score, the therapy response was evaluated.

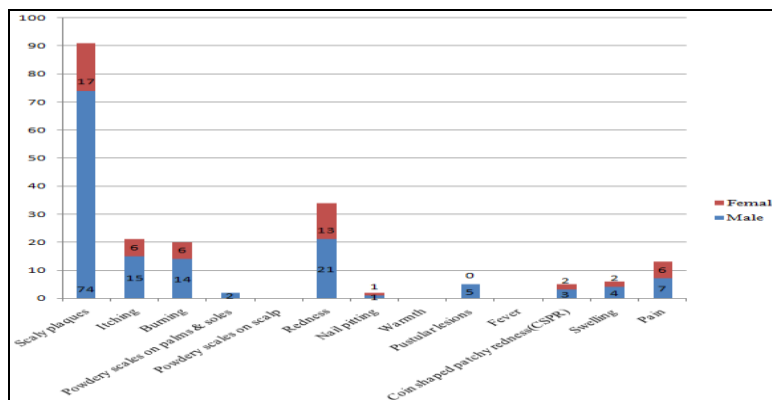
**Follow-up:** The PASI score was used to evaluate the treatment response, tolerability and compliance at intervals of 4 weeks, 8 weeks, and 12 weeks.

**Statistical Analysis:** Microsoft Word and Excel were used to create graphs and tables, and statistical software called SPSS version 21 was utilised to analyse the data.

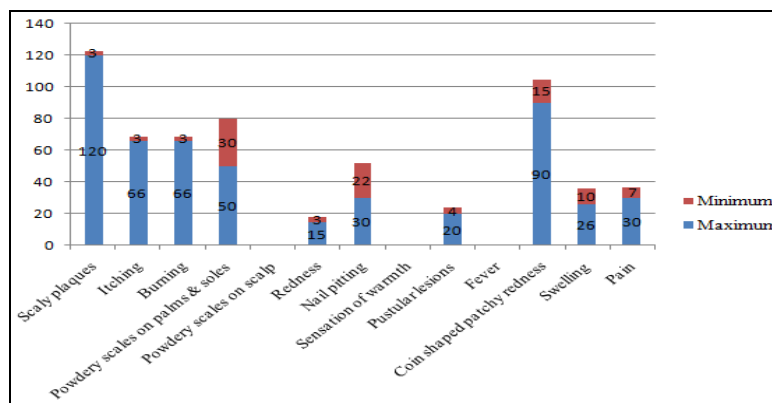
**RESULTS:** 65 patients were between 18 to 40 years old. 76 (79.16%) patients were male, and 20 (20.83%) patients were female. 70 (72.91%) had chronic plaque psoriasis, although there were also a few patients with psoriatic arthritis (n=11), erythrodermic (n=6), pustular (n=5), palmoplantar (n=2) and nail (n=2) forms.

**TABLE 1: CLINICAL DIAGNOSIS-TYPE OF PSORIASIS**

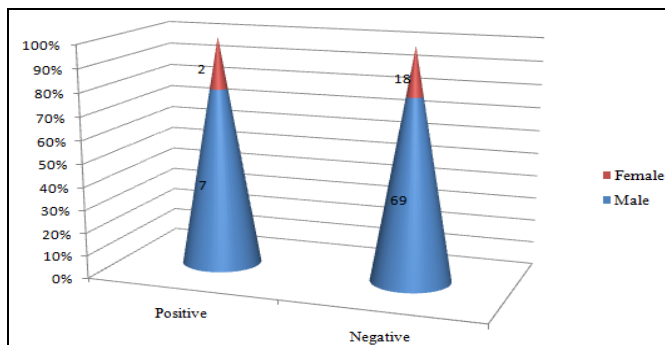
Type	Gender	Age n (%)				Total
		18-30	31-40	41-50	51-60	
Chronic plaque	Male	14	26	08	06	54
	Female	06	04	06	-	16
Erythrodermic	Male	04	02	-	-	06
	Female	-	-	-	-	-
Guttate	Male	-	-	-	-	-
	Female	-	-	-	-	-
Nail	Male	-	01	-	-	01
	Female	-	-	01	-	01
Palmoplantar	Male	-	-	02	-	02
	Female	-	-	-	-	-
Pustular	Male	02	01	01	01	05
	Female	-	-	-	-	-
Scalp	Male	-	-	-	-	-
	Female	-	-	-	-	-
Psoriatic arthritis	Male	01	03	02	02	08
	Female	-	01	02	-	03



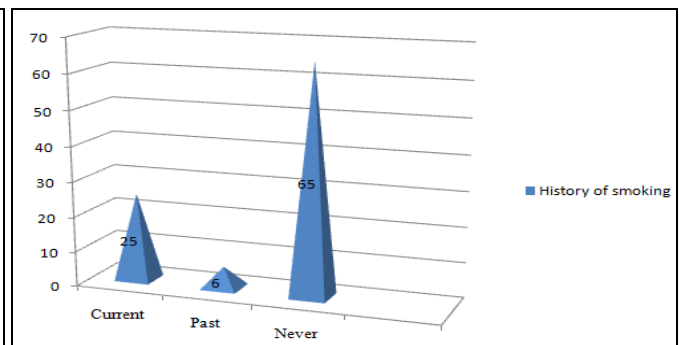
**FIG. 1: PRESENTING COMPLAINTS / SYMPTOMS**



**FIG. 2: DURATION OF SYMPTOMS (IN DAYS)**



**FIG. 3: FAMILY HISTORY OF PSORIASIS**



**FIG. 4: HISTORY OF SMOKING\***

On an average of 4-5cigarettes or 10-20 beedis/day for a mean duration of 5 years

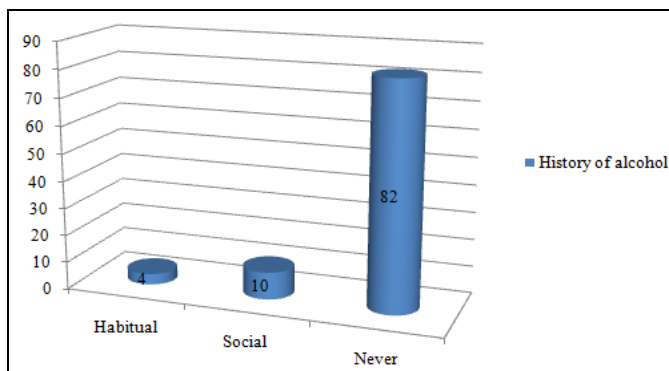


FIG. 5: HISTORY OF ALCOHOL<sup>€</sup>

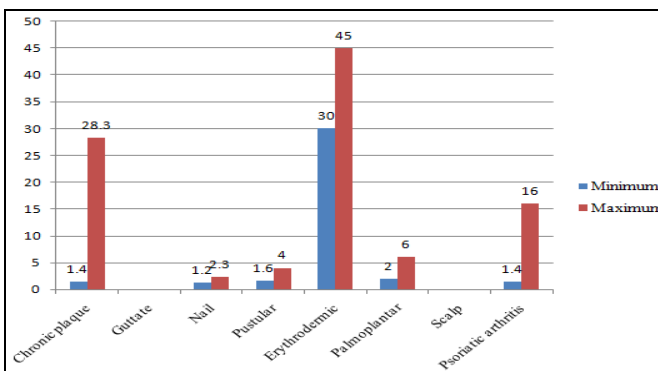


FIG. 6: BASELINE PASI SCORE

€ On an average of 1-2 drinks/week for an average of 5-6 years.

TABLE 2: TOPICAL THERAPY

Drug therapy	Gender	Type of psoriasis n (%)								Total
		Chronic plaque	Guttate	Nail	Pustular	Erythro-dermic	Palmo-plantar	Scalp	Psoriatic arthritis	
Clobetasol	Male	30	-	-	05	03	02	-	07	47
	Female	10	-	-	-	-	-	-	03	13
	Total	40	-	-	05	03	02	-	10	60
Beclomethasone	Male	08	-	-	04	-	-	-	-	12
	Female	05	-	-	-	-	-	-	-	05
	Total	13	-	-	04	-	-	-	-	17
White soft paraffin & light liquid paraffin lotion	Male	13	-	-	04	04	01	-	-	22
	Female	07	-	-	-	-	-	-	-	07
	Total	20	-	-	04	04	01	-	-	29
Fusidic acid	Male	04	-	-	03	03	-	-	-	10
	Female	01	-	-	-	-	-	-	-	01
	Total	05	-	-	03	03	-	-	-	11
Coal tar & Salicylic acid shampoo	Male	03	-	-	-	-	-	-	-	03
	Female	02	-	-	-	-	-	-	-	02
	Total	05	-	-	-	-	-	-	-	05
Halobetasol propionate	Male	05	-	-	-	-	-	-	-	05
	Female	02	-	-	-	-	-	-	-	02
	Total	07	-	-	-	-	-	-	-	07
Salicylic acid & lactic acid	Male	09	-	-	-	-	-	-	-	09
	Female	04	-	-	-	-	-	-	-	04
	Total	13	-	-	-	-	-	-	-	13
Emollient (Aloe vera, vitamin E)	Male	04	-	-	01	-	02	-	-	07
	Female	02	-	-	01	-	-	-	-	03
	Total	06	-	-	02	-	02	-	-	10

TABLE 3: SYSTEMIC THERAPY

Drug therapy	Gender	Type of psoriasis n (%)							Total
		Chronic plaque	Guttate	Nail	Pustular	Erythro-dermic	Palmo-plantar	Scalp	
Tablet Methotrexate	Male	39	-	01	05	03	01	-	05
	Female	15	-	01	-	-	-	-	02
	Total	54	-	02	05	03	01	-	07
Injection Methotrexate	Male	06	-	-	05	-	-	-	-
	Female	01	-	-	-	-	-	-	-
	Total	07	-	-	05	-	-	-	-
Injection Infliximab	Male	44	-	-	05	04	01	-	08
	Female	08	-	-	-	-	-	-	03
	Total	52	-	-	05	04	01	-	11

Tablet Folic acid	Male	45	-	01	05	03	01	-	05
	Female	16	-	01	-	-	-	-	02
	Total	61	-	02	05	03	01	-	07
Capsule	Male	09	-	-	-	-	-	-	03
	Female	03	-	-	-	-	-	-	-
Docosahexaenoic + Eicosapentaenoic acid	Total	12	-	-	-	-	-	-	03
Capsule	Male	04	-	-	-	-	-	-	03
	Female	-	-	-	-	-	-	-	01
Indomethacin	Total	04	-	-	-	-	-	-	04
	Male	05	-	-	05	-	-	-	03
Doxycycline	Female	-	-	-	-	-	-	-	01
	Total	05	-	-	05	-	-	-	04
Tablet Levocetirizine	Male	18	-	-	-	-	-	-	02
	Female	04	-	-	-	-	-	-	01
	Total	22	-	-	-	-	-	-	03
Tablet Omnacortil	Male	-	-	-	-	-	-	-	03
	Female	-	-	-	-	-	-	-	01
	Total	-	-	-	-	-	-	-	04
Injection Avil	Male	06	-	-	-	-	-	-	-
	Female	04	-	-	-	-	-	-	-
	Total	10	-	-	-	-	-	-	-
Injection Hydrocortisone	Male	06	-	-	-	-	-	-	01
	Female	04	-	-	-	-	-	-	01
	Total	10	-	-	-	-	-	-	02
Tablet Paracetamol	Male	09	-	-	02	-	-	-	02
	Female	05	-	-	-	-	-	-	01
	Total	14	-	-	02	-	-	-	03
Tablet Acitretin	Male	08	-	-	-	-	-	-	01
	Female	04	-	-	-	-	-	-	-
	Total	12	-	-	-	-	-	-	01
Capsule Vitamin E	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	02
	Total	-	-	-	-	-	-	-	02
Injection Pheniramine maleate	Male	02	-	-	-	-	-	-	02
	Female	-	-	-	-	-	-	-	-
Tablet Hydroxyzine hydrochloride	Total	02	-	-	-	-	-	-	02
	Male	-	-	-	-	-	-	-	-
Injection Meropenem	Female	-	-	-	-	-	-	-	-
	Total	-	-	-	02	-	-	-	-
Tablet Bilastine	Male	-	-	-	02	-	-	-	-
	Female	-	-	-	-	-	-	-	-
	Total	-	-	-	02	-	-	-	-
Tablet Vitamin B complex	Male	-	-	-	05	-	02	-	-
	Female	-	-	-	-	-	-	-	-
	Total	-	-	-	05	-	02	-	-
Tablet Calcium	Male	02	-	01	-	-	02	-	-
	Female	02	-	01	-	-	-	-	-
	Total	04	-	02	-	-	02	-	-
Tablet Aprimilast	Male	02	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
Tablet Amoxicillin + Clavulanic acid	Total	02	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-

Most participants received treatment from topical drugs like Glucocorticoids either alone or in combination with calcitriol, salicylic acid, coal tar and emollients. Severe cases of plaque psoriasis

were treated with topical therapy, systemic methotrexate therapy and NBUVB phototherapy. In most participants, topical medication resulted in an efficient resolution and sufficient symptom relief.

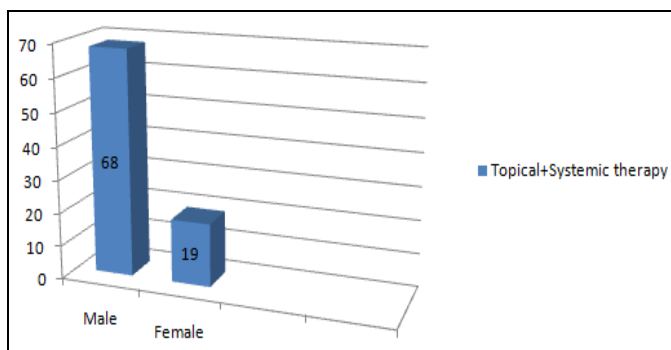


FIG. 7: TOPICAL + SYSTEMIC THERAPY

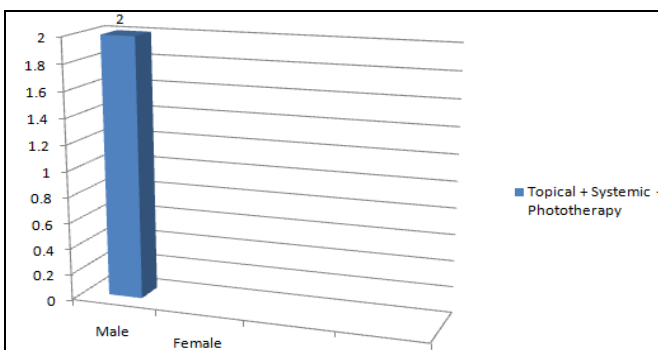


FIG. 8: TOPICAL +SYSTEMIC + PHOTOTHERAPY

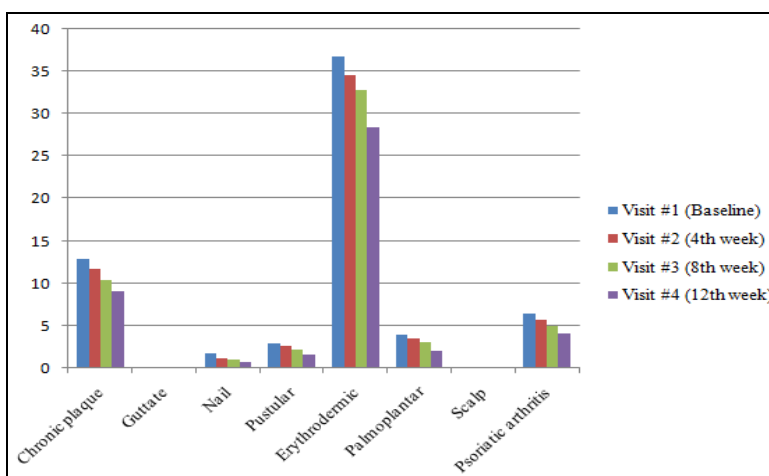


FIG. 9: TREATMENT OUTCOME WITH DIFFERENT TYPES OF PSORIASIS (PASI SCORE)

TABLE 4A: PATIENT COMPLIANCE TO MEDICATIONS AT DIFFERENT VISITS\*

Compliance	Only Glucocorticoids	Glucocorticoids + White soft paraffin & light liquid paraffin/ Fusidic acid/ Emollient	Glucocorticoids + coal tar/ Salicylic acid	Glucocorticoids + White soft paraffin & light liquid paraffin+ Coal tar/ Salicylic acid	White soft paraffin & light liquid paraffin/ Fusidic acid/ Salicylic acid/ Emollient	No Topical medications	Total
<b>Visit #1 (Baseline)</b>							
>95%	20	40	15	02	06	09	92
80-95%	01	01	-	01	-	-	03
<80%	01	-	-	-	-	-	01
Total	22	41	15	03	06	09	96
<b>Visit #2 4th week</b>							
>95%	21	40	15	02	06	09	92
80-95%	01	01	-	01	-	-	03
<80%	-	-	-	-	-	-	-
Total	22	41	15	03	06	09	96
<b>Visit #3 8th week</b>							
>95%	21	41	15	03	06	09	95
80-95%	01	-	-	-	-	-	01
<80%	-	-	-	-	-	-	-
Total	22	41	15	03	06	09	96
<b>Visit #4 12th week</b>							

>95%	22	41	15	03	06	09	96
80-95%	-	-	-	-	-	-	-
<80%	-	-	-	-	-	-	-
Total	22	41	15	03	06	09	96

TABLE 4B: PATIENT COMPLIANCE TO MEDICATIONS AT DIFFERENT VISITS\*

Compliance	Systemic + Topical therapy	Phototherapy + Topical therapy!		Phototherapy + Topical + Systemic!
		Visit #1 (Baseline)	4th week	
>95%	86	02	02	02
80-95%	01	-	-	-
<80%	-	-	-	-
Total	87	02	02	02
<b>Visit #2 4th week</b>				
>95%	87	02	02	02
80-95%	-	-	-	-
<80%	-	-	-	-
Total	87	02	02	02
<b>Visit #3 8th week</b>				
>95%	87	02	02	02
80-95%	-	-	-	-
<80%	-	-	-	-
Total	87	02	02	02
<b>Visit #4 12th week</b>				
>95%	87	02	02	02
80-95%	-	-	-	-
<80%	-	-	-	-
Total	87	02	02	02

\* Evaluated using a daily drug reminder chart. < 3 doses/applications missed in a period of 30 days - >95% compliance. 3 to 12 doses/applications missed in a period of 30 days - 80-95% compliance. >12 doses/applications missed in a period of 30 days - < 80% compliance. ! Only systemic and topical therapeutic compliance is evaluated.

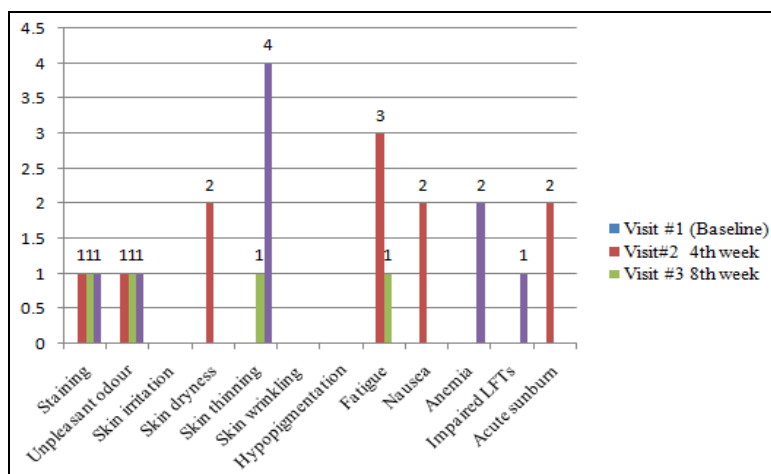


FIG. 10: ADVERSE EVENTS REPORTED AT DIFFERENT TIME INTERVALS

Most patients said scaly plaque (94.79%) and redness (35.41%) were their most frequent symptoms Fig. 1, 2. The itching was complained by (21.87%), and was present throughout the day but become more severe in evening and night. Burning sensation was complained by 20.83% participants. Only 9.37% of the subjects (n-09) had a family history of psoriasis Fig. 3. 25 patients were current smokers and 5 were past smokers Fig. 4. In contrast, 4 patients had habitual history and 10

had social history to alcohol Fig. 5. Plaque psoriasis was the most common psoriasis that had PASI scores ranging from 1.4 to 28.3, with the lowest score being 1.4 and the highest being 28.3 Fig. 6. Topical drugs along with systemic therapy were given in 87 patients Fig. 7. In contrast, topical along with systemic and phototherapy were given in 2 patients Fig. 8. The various treatment outcomes at week 4, 8 and 12 are shown in Fig. 9 which depicts gradual improvement with time.

Skin thinning was the most common adverse event  
**Fig. 10.**

**DISCUSSION:** The majority of study participants were between the ages of 18 years to 40 years, and the individual's average age was  $35.36 \pm 9.84$  years, which suggests that psoriasis incidence peaks in the third and fourth decades of life<sup>17</sup>. However, 22 subjects (22.91%) in this study were 41-60 years old, showing an age distribution of bimodal pattern<sup>18</sup>.

Most patients said that the most frequent symptoms were scaly plaque (94.79%) and redness (35.41%). Itching was complained by (21.87%), and was present throughout the day but become more severe at evening and night. Burning sensation was complained by 20.83% participants. The symptom pattern matched to what was seen in other studies<sup>17</sup>. Nail pitting was seen in two patients and coin shaped patchy redness in five patients. The other complaints were powdery scales on palms and soles (n=2), swelling (n=6) and pain (n=13). Five patients had pustular lesions in their body. Majority of the study subjects i.e. 79 (82.29%) had multiple symptoms. In other investigations, symptoms with a similar pattern were described<sup>19</sup>.

Majority of the participants i.e., 70 (72.91%) had chronic plaque psoriasis, although there were also a few patients with psoriatic arthritis (n=11), erythrodermic (n=6), pustular (n=5), palmoplantar (n=2), and nail (n=2) forms. 30 participants (31.25%) of the chronic plaque psoriasis patients were between the ages of 31 and 40 years, 20 participants were in the age group of 18 to 30, 14 participants in the age group of 41 to 50 and 6 participants in the age group of 51 to 60. In other studies, the psoriasis clinical pattern was similar to our study<sup>17,20</sup>. With a mean PASI score of  $12.89 \pm 5.02$ , patients with chronic plaque psoriasis had scores ranging from 1.4 to 28.3, with the lowest score being 1.4 and the highest being 28.3. The mean PASI scores in other types of psoriasis are nail psoriasis ( $1.75 \pm 0.77$ ), pustular psoriasis ( $2.98 \pm 0.97$ ), erythrodermic psoriasis ( $36.83 \pm 5.74$ ), palmoplantar psoriasis ( $4 \pm 2.82$ ) and psoriatic psoriasis ( $6.43 \pm 3.9$ ). The documented baseline PASI score was consistent with earlier research that also found that most patients with PASI <10 had less severe lesions<sup>21, 22</sup>. Clobetasol (n=60),

beclomethasone (n=17), and halobetasol propionate (n=7) were the glucocorticoids used. Due to their stronger localised effects on the skin and significant anti-inflammatory and antiproliferative properties, clobetasol and halobetasol are typically selected for topical therapy in psoriasis<sup>23</sup>.

In 22 participants (22.91%), glucocorticoids were used either as monotherapy while in combination with white soft paraffin, fusidic acid and emollients in 41 participants (42.7%), in combination with coal tar and salicylic acid in 15 participants (15.62%), and in combination with white soft paraffin, coal tar along with salicylic acid in 3 participants (3.12%). In 2 participants (2.08%), systemic medication was combined with topical and phototherapy. Clobetasol was most frequently utilised among the glucocorticoids<sup>22</sup>. In 72 individuals (75%), systemic medication with oral Methotrexate 7.5 mg once weekly, supplemented with folic acid, was utilised. However, topical drugs with Methotrexate were given in 65 participants.

Extreme instances of chronic plaque psoriasis were treated with a combination of topical, systemic, and phototherapy. Methotrexate 7.5 mg was administered orally once a week for 12 weeks as systemic treatment and narrow-band UVB irradiation (NB-UVB) was used as phototherapy for 12 weeks. Additionally, antihistaminic were utilised to treat the itching. Similar triple therapy patterns have been documented in numerous other studies, although they only took into account of the patients when the baseline PASI score was more than 10<sup>22, 24</sup>.

The mean PASI score for chronic plaque psoriasis (n=70) decreased from 12.89 at baseline to 9.15 after 12 weeks of therapy, with a decrease of 29.01% in PASI score showing substantial improvement. The ranges of improvement (70-90%) using various treatment techniques for longer than six months have been found in other trials<sup>24</sup>. Two subjects had nail psoriasis, which affected the fingernails (mean PASI score: 1.75); after treatment with methotrexate+calcium+folic acid, mean PASI decreased to 0.8. When clobetasol, meropenem, doxycycline was used to treat five patients with pustular psoriasis, the mean PASI score decreased from 2.98 (baseline) to 1.66 at the



end of 12 weeks, suggesting a 44.29% drop. After 12 weeks of treatment with clobetasol and emollients for six subjects with erythrodermic psoriasis (baseline mean PASI score: 36.83), the PASI score was reduced to 28.45.

After 12 weeks of glucocorticoids and calcium therapy for palmoplantar psoriasis (n=2; mean baseline PASI score of 4), the mean PASI score was 2.05 (48.75% lower). In research with 98 participants who had palmoplantar psoriasis, the mean baseline PASI score ranged from 6 to 10, and after 12 weeks of treatment with topical therapy with Methotrexate, phototherapy alone, or phototherapy plus Methotrexate, the PASI score dropped to 2-3, with an overall improvement rate of 61 to 64%<sup>25</sup>.

In the fourth week of phototherapy, skin dryness was reported (n=2) but went away in the following visits. Skin thinning was noticed after the eighth week (n=1) and the twelfth week (n=4) in participants treated with topical glucocorticoids used as monotherapy but was not noticed when used in fixed dose combination with other topical agents. When receiving Methotrexate, fatigue was noted at week 4 (n = 3), week 8 (n = 1), and nausea at week 4 (n=2), although these symptoms vanished on future visits.

Two patients receiving Methotrexate developed anaemia after 12 weeks; in these patients, the dose was decreased to 2.5 mg/week. They were encouraged to attend weekly follow-up appointments to check their Hb% and blood counts. One participant who got Methotrexate showed a mild impairment in Liver function tests. Acute sunburn was reported in 2 participants who received phototherapy at second visit (4 weeks). Similar adverse event patterns have been described in other studies, some of which were moderate, self-limiting, and go away with continuing dosing<sup>25, 26</sup>. In contrast to the other subjects, who had shown moderate compliance of 3.12% at week four and 1.04% at week eight, more than 96.87% of research participants demonstrated good compliance at week four and 98.95% at week twelve to topical medications, while 86 out of 87 *i.e.*, 98.85% had good compliance to systemic with topical therapy at first visit in this study. The expensive brands of emollients were the reason of

poor compliance due to the increased cost of the treatment, but later they were substituted in subsequent follow up visits with inexpensive brands. Poor compliance was as high as 39% in other studies, and the obvious causes were side effects, therapy costs, and forgetfulness<sup>27, 28</sup>.

**Limitations:** Firstly, the sample size was small. Second, because the treatment's follow-up time was so brief (12 weeks), there was no opportunity to compare long-term therapy's efficacy or look for delayed side outcomes. Finally, the patients' socioeconomic situation and poor educational levels are other constraints that apply to all clinical research in nations like India. Other reasons that contribute to missed follow-up and a rise in treatment protocol nonadherence include forgetfulness, lack of time, adverse effects, unclear directions, and the cost of the therapy course.

**CONCLUSION:** It was found in the current study that the majority of psoriasis patients respond well to topical treatments, and extra systemic and/or phototherapy may only be needed for severe cases of persistent plaque psoriasis. Most individuals experienced sufficient symptom relief in addition to the effective treatment of lesions caused by the topical medicines.

Due to their powerful anti-inflammatory and antiproliferative effects, glucocorticoids are the cornerstone of topical therapy. To increase the effectiveness of the treatment and lower the dosage of glucocorticoids, other topical drugs can be administered as adjuvants, reducing the risk of steroid-related side effects.

More severe instances could call for continuous topical treatment together with systemic and/or phototherapy. Regular follow-up is necessary to assess the effectiveness of the treatment as well as to ensure good patient compliance through effective counselling for the chronic and recurrent nature of the disease; additional research should be conducted using various combinations of topical medications with or without glucocorticoids, different systemic agents, and phototherapy, when necessary, for a longer period of time. This will allow researchers to evaluate the relative effectiveness of the various treatment modalities and determine the most effective regimen that will

result in long-lasting resolution of the lesions and remission of the disease process that is tailored to the patient's condition.

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