



DRUG PRESCRIBING PATTERN IN PATIENTS WITH PSORIASIS AT A TERTIARY CARE TEACHING HOSPITAL.

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ABSTRACT

Background: Psoriasis is a chronic inflammatory skin disease with a prevalence varying from 0.44-2.8 % in India. With limited knowledge of how drugs are prescribed and consumed, it is challenging to suggest recommendations to improve or modify prescribing patterns. Drug utilization study aims to facilitate rational use of drugs

Objective: To study prescription patterns in psoriasis in a tertiary care teaching hospital using National Institute for Health and Clinical Excellence (NICE) guidelines.

Methods: A prospective, cross-sectional study was conducted after prior approval of IEC. Patients visiting Dermatology OPD at the Tertiary Care teaching Hospital who were newly diagnosed with psoriasis by the Dermatologist were considered for collection of data. Informed consent was taken before collection of data.

Results: A total of 115 patients were enrolled for the study within a study period of 1 year who received 620 drugs. The number of drugs prescribed per patient was 4.34 ± 1.22 (Mean $\pm$ SD). Majority of the drugs prescribed were administered by topical route 344 (55.48%). Most common drugs prescribed were steroids 115 (100%) followed by salicylic acid 94 (81.74%), antioxidants along with vitamins 102 (88.69%), antihistaminics 77 (66.96%), moisturisers containing liquid paraffin 75 (65.22%), methotrexate 41 (35.65%) and folic acid 41 (35.65%). Most frequently prescribed topical drug was steroid 115 (100%) followed by salicylic acid 94 (81.74%) and liquid paraffin 75 (65.22%).

Conclusion: In our study majority of patients were prescribed topical agents for treatment of psoriasis. About 64.19% of prescribed drugs are mentioned in the NICE guideline for psoriasis.

Keywords: Psoriasis, drug utilization, topical steroids.

INTRODUCTION

Psoriasis is a long-term skin disorder involving chronic inflammation and accelerated skin cell turnover. It often presents as well-defined red, scaly plaques, most commonly found on the elbows, knees, scalp, and nails, and it generally follows a pattern of flare-ups and periods of remission [1].

Psoriasis is a multifaceted and frequently challenging condition within dermatology and autoimmune disease studies. Its importance goes far beyond the visible skin lesions, reaching into the complex psycho-social factors that deeply influence patients' well-being. As a chronic, recurring skin disorder, it not only presents physical symptoms but also deeply influences the psychosocial health and overall quality of life of those affected [2].

The majority of cases can be effectively managed in outpatient settings, with hospitalization rarely required. Rarely, severe and potentially life-threatening forms may arise that require inpatient care. However, these presentations are far less frequent today due to the availability of numerous systemic therapies for severe psoriasis [3].

Prevalence of psoriasis in India varies from 0.44% to 2.8%. It is twice more common in males as compared to females, and most of the patients are in their third or the fourth decade of life at the time of presentation [4].

Numerous topical and systemic therapies are available for the treatment of psoriasis. For most people, psoriasis is managed in primary care, with specialist referral being needed at some point for up to 60% of people [5].

Regularly monitoring patterns of drug use is one of the many measures which is commonly undertaken to analyse the rationality of their application and to provide clinicians with feedback or recommendations [6]. Rational drug use involves ensuring that patients receive medicines appropriate for their clinical needs, in the proper dosage, for an appropriate duration, and at the lowest possible cost to both the patient and the community [7].

The purpose of a prescribing pattern study is to observe and assess how medications are prescribed and, when needed, to suggest changes to improve the prescribing practices of healthcare professionals [8]. The primary aim of drug utilization research is to facilitate rational use of drugs. Without accurate information on prescribing and usage patterns, it is difficult to propose effective measures to enhance prescribing behaviour [9]. Due to the progressive increase in the number of psoriasis patients, such research is crucial for developing countries like India to promote rational therapy, so the study was planned to evaluate prescribing pattern of drugs in patients with psoriasis at a tertiary care teaching hospital in Assam.

METHODS

A prospective, observational, cross-sectional study was undertaken over a period of one-year in the dermatology outpatient department, following prior written approval from the Institutional Ethics Committee.

Patients attending the dermatology outpatient department who were newly diagnosed with psoriasis by the attending dermatologist were assessed for eligibility.

Inclusion criteria: Newly diagnosed patients of chronic psoriasis (Mild to Moderate), age >10 years and of either sex.

Exclusion Criteria: Patient unwilling to participate, who have very severe or erythrodermic psoriasis, drug-induced psoriasis, psoriatic arthritis, terminally ill patients, patient with renal failure, diabetes, carcinoma, pregnant and lactating mothers.

Individuals who met the predefined inclusion criteria were enrolled in the study after obtaining written informed consent.

Participant's demographic characteristics, clinical diagnosis, history of present illness, past medical and family history, and details of the prescribed treatment were systematically documented using a case record form. The complete prescription issued at the time of consultation was noted in the case record form. Information related to the use of various therapies in psoriasis such as type of the drug, whether given as fixed dose combination, total number of drugs, dosage form, dosing frequency, duration, route of administration was also recorded. The socioeconomic status of the patients was measured by using the modified Kuppuswamy scale [10].

Data were entered into Microsoft Excel 2007® and subsequently reviewed for completeness and accuracy. Data were analysed using descriptive statistics for the socio-demographic details, drug use

pattern, and prescribing practices were evaluated for rationality in accordance with NICE guidelines.

RESULTS

In this study, prescriptions from 115 newly diagnosed patients with psoriasis attending the Dermatology Outpatient Department of a tertiary care teaching hospital were collected and analysed over a period of one year.

Out of total 115 patients majority were male 71(61.74%) followed by female 44(38.26%). Mean age of patients was 37.8 ± 14.11 years. Out of 115 patients 32 (27.83%) were in the 40-49 years of age group followed by 25 (21.74%) patients belonging to 30-39 years of age group (**Fig 1**). Male: female ratio was 1.61:1. About 33 (42.8%) male patients belonged to 30-39 and 40-49 yrs of age group. About 24 (54.5%) female patients belonged to 30-39 and 40-49 yrs of age group (**Table 1**).

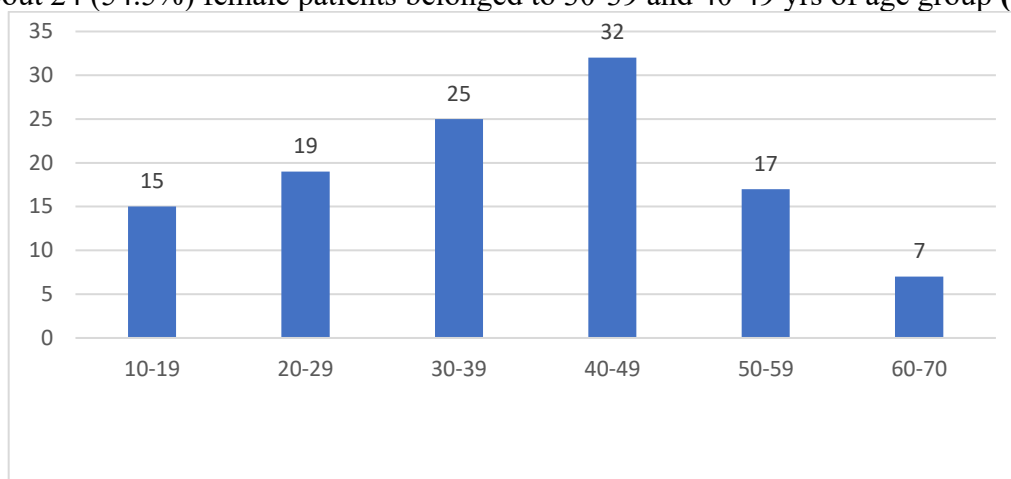


Fig 1: Age distribution of patients with psoriasis

Table 1: Gender distribution of patients with psoriasis

Age group (in years)	Male (61.74%)	Female (38.26%)	Total 115 (100%)
10-19	9	6	15 (13.04%)
20-29	13	6	19 (16.52%)
30-39	11	14	25 (21.74%)
40-49	22	10	32 (27.84%)
50-59	12	5	17 (14.78%)
60-69	4	3	7 (6.08%)

Of all the patients who were enrolled for study majority of them belonged to lower socioeconomic class 68 (59.13%) followed by upper lower socioeconomic class 33 (28.70%). 12 (10.43%) patients belonged to lower middle class and only 2 (1.74%) patients belonged to upper middle socioeconomic class. None of the patients enrolled in the study belonged to upper socioeconomic class (**Table 2**).

Table 2: Socioeconomic class of patients with psoriasis

Socioeconomic class	Score	N
I	Upper	26-29
II	Upper middle	16-25
III	Lower middle	11-15
IV	Upper lower	05-10
V	Lower	01-04

Total 115 patients received 620 drugs; the number of drugs prescribed per patient being 4.34 ± 1.22 (Mean $\pm$ SD). About 67 (58.26%) patients were prescribed 2-4 drugs and 48 (41.74%) patients were prescribed 5-6 drugs (Table 3).

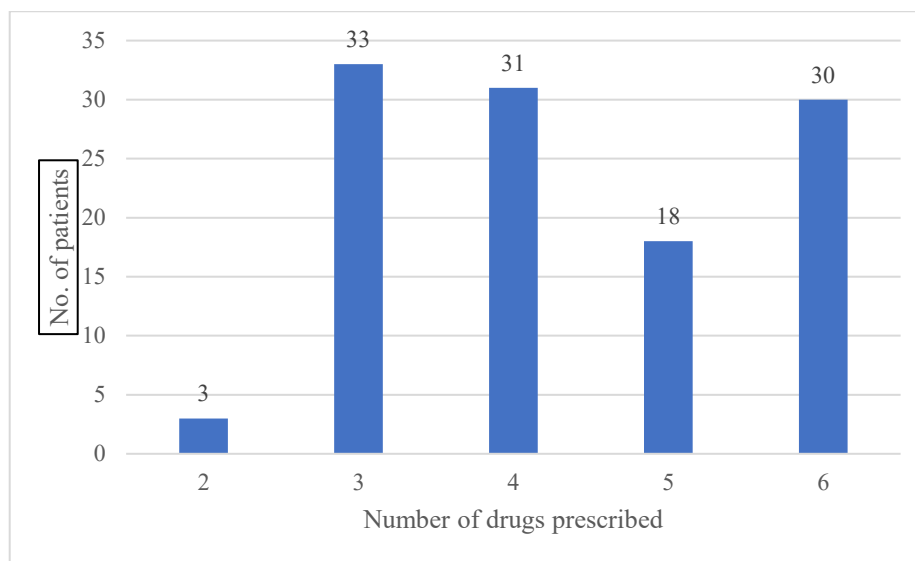


Fig 2: Number of drugs prescribed in patients of psoriasis.

Most common drugs prescribed were steroids 115 (100%) followed by salicylic acid 94 (81.74%), antioxidants along with vitamins 102 (88.69%), antihistaminic 77 (66.96%), moisturisers containing liquid paraffin 75 (65.22%), methotrexate 41 (35.65%) and folic acid 41 (35.65%) (Fig 3). Most frequently prescribed topical drug was steroid 115 (100%) followed by salicylic acid 94 (81.74%), liquid paraffin 75 (65.22%) and ketoconazole 28 (23.33%) (Table 3). Among the steroids clobetasol was prescribed most commonly in 113 number of patients followed by mometasone in 1 patient and dosenide in 1 patient. Salicylic acid was always used in combination with a steroid.

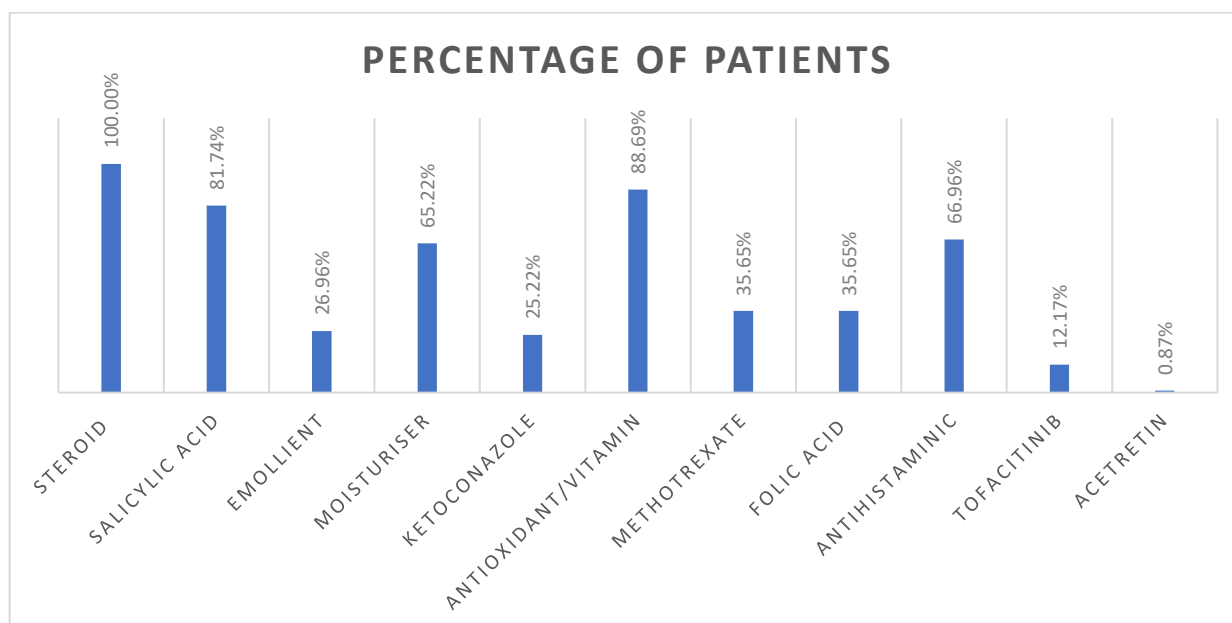


Fig 3: Commonly prescribed drugs in psoriasis

Table 3: Topically prescribed drugs in psoriasis (n=115)

Type of Drug	n (%)
Steroid	115 (100%)
Salicylic acid	94 (81.74%)

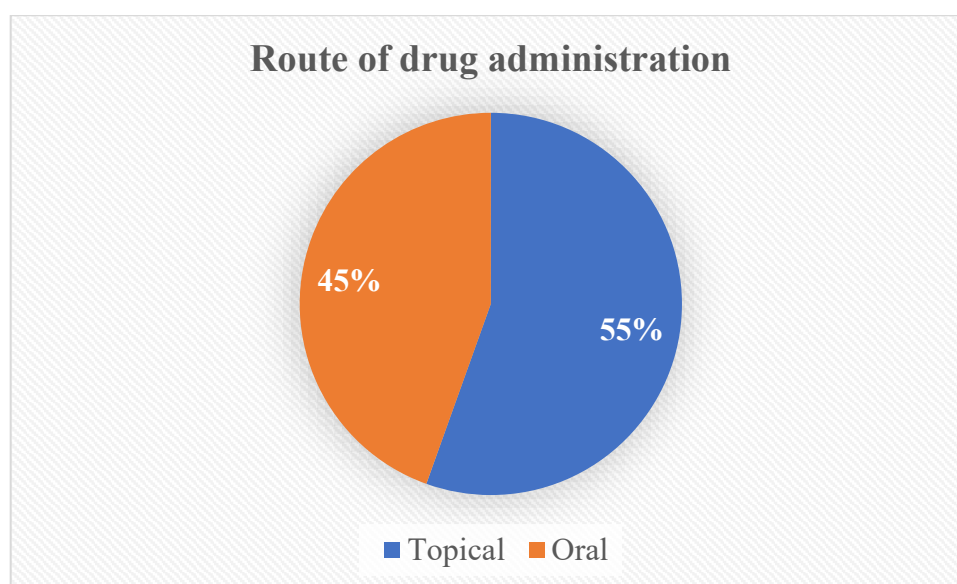
Emollient	31(26.96%)
Moisturiser	75 (65.22%)
Ketoconazole	29 (25.22)

Table 4: Systemically prescribed drugs in psoriasis (n=115)

Type of drug	Count
Antioxidant/Vitamin	102 (88.69%)
Methotrexate	41 (35.65%)
Folic acid	41 (35.65%)
Antihistaminic	77 (66.96%)
Tofacitinib	14 (12.17%)
Acetretin	1(0.87%)

Most frequently prescribed drugs by systemic administration were antioxidants along with vitamins 102 (88.69%) followed by antihistaminic 77 (66.96%), methotrexate and folic acid 41 (35.65%), tofacitinib 14 (12.17%) and acitretin 1(0.87%) (Table 4). Most frequently prescribed antihistaminic was levocetirizine (n=68) followed by fexofenadine (n=6) and loratadine (n=3).

Route of administration: Majority of the drugs prescribed were administered by topical route 344 (55.48%) followed by oral route 276 (44.52%).

**Fig 4: Route of drug administration in patients of psoriasis**

About 88% of drugs were prescribed by brand name. About 40.32% drugs belonged to National list of Essential Medicines India,2022 [11]. About 25.81% drugs belonged to WHO model list of Essential medicines [12]. About 398 (64.19%) of prescribed drugs were mentioned in the NICE guideline for psoriasis [5].

Discussion

In India, few studies have been done on drug use pattern of psoriasis [13]. Despite the high prevalence of psoriasis in the Indian population and ongoing research advancements, India still demonstrates a comparatively limited research output on psoriasis [14]. There is a scarcity of data concerning drug utilization pattern of psoriasis amongst the general population of India.

In the present study prescriptions of 115 newly diagnosed patients of psoriasis attending Dermatology outpatient department at a tertiary care teaching hospital were collected and analysed. In the present study ratio of male to female (1.61:1) was found to be high. An Indian study by Bedi

et al also reported high male to female ratio 2.4:1 [15]. In another study from by Arora et al, male-to-female ratio of 2.54:1 was reported [16]. Psoriasis shows a mere preponderance in the male gender.

In our study mean age of patients was 37.8 ± 14.11 years. Ratnika, et al also reported Mean age of 35.36 ± 13.26 years in their study [17]. An Indian study by Meenu Vijayan et al reported that the majority of the patients (39%) had onset of disease between 21-40 years [13]. Accordingly, the observations reported in previous studies are consistent with those of our study.

In the present study total 115 patients received 620 drugs. The average number of drugs prescribed per encounter is an important indicator of prescribing practices. In the present study it was 4.34 ± 1.22 (Mean $\pm$ SD). It is desirable to keep the average number of drugs per prescription to a minimum, as higher number of drugs increases the risk of drug-drug interactions, adverse drug reactions, poor medication adherence, and ultimately imposes a greater financial burden on the patient [18]. However, given the progressive and chronic nature of the disease, the use of multiple medications was necessary.

Most commonly prescribed drug were topical steroids followed by salicylic acid. According to the NICE guidelines topical corticosteroids are included as first line therapy. Therefore, in our study, the predominant prescription of topical corticosteroids along with salicylic acid was justified. Though corticosteroids are the most commonly prescribed drugs topically for psoriasis their use is associated with a number of adverse effects like striae, hypopigmentation, atrophy and telangiectasias when used topically. The systemic effects such as suppression of hypothalamic pituitary adrenal axis can be associated with long-term topical application of potent steroids especially, in younger patients [19]. Regular emollient use may be considered to reduce fall of scales and help with other symptoms, including itch for psoriasis [5]. So, prescribing moisturizers /emollients is a rational therapy and as per the standard guidelines.

Systemic agents like methotrexate along with folic acid were prescribed in 41 (35.65%) patients. Folic acid was administered to prevent methotrexate induced folic acid deficiency.

NICE guidelines recommend to offer methotrexate as the first choice of systemic agent for people with psoriasis [5]. El-ESawy FM et al also found significant clinical improvement in psoriasis patients after three months of systemic methotrexate therapy [20].

As per NICE guidelines narrowband ultraviolet B (UVB) phototherapy should be given to patients with psoriasis that cannot be controlled with topical treatments and that phototherapy (narrowband UVB, broadband UVB or PUVA) should not be used routinely as maintenance therapy as it is known to be associated with high risk of skin cancer (squamous cell carcinoma), basal cell carcinoma (BCC) and malignant melanoma [5]. This explains that none of the patients at our setup was advised photochemotherapy. As majority of patients coming to our hospital belonged to the lower economic class, affordability was a major factor concerning the use of biological agents. None of the patients were prescribed any biological agent.

Analysis of the prescription charts revealed that most medications were prescribed by brand names, with generic names used infrequently. This practice is associated with increased treatment costs and should be discouraged. Prescribing by generic name offers greater flexibility to dispensing pharmacists and is generally more cost-effective than the use of brand-name dru

Conclusion

The findings of our study show the use of various drugs such as topical corticosteroids, salicylic acid, antihistamines, moisturizers, methotrexate and vitamins/antioxidants in the management of psoriasis. In our study majority of patients were prescribed topical agents for treatment of psoriasis. About 64.19% of prescribed drugs are mentioned in the NICE guideline for psoriasis.

Repeated and periodic monitoring of drug utilization patterns, coupled with regular feedback to prescribers, is essential. Further multicentric studies are warranted to formulate strategies that promote and strengthen rational prescribing practices among prescribers.

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