

A PROSPECTIVE OBSERVATIONAL STUDY ON PREVALENCE, PATTERN AND CONSEQUENCES OF TOPICAL STEROIDS MISUSE IN A TERTIARY CARE CENTRE IN WESTERN RAJASTHAN***¹Dr. Uma Chaturvedi, ²Dr. Raj Kumar Rathore, ³Dr. Rishi Raj Sharma**¹ Final Year Resident, Department of Pharmacology at Dr. SNMC Jodhpur.² Sr. Professor Department of Pharmacology at Dr. SNMC Jodhpur.³ Assistant Professor Department of Pharmacology at Dr. SNMC Jodhpur.***Corresponding Author: Dr. Uma Chaturvedi**

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INTRODUCTION

The discovery and introduction of topical corticosteroids (TCs) in the 1950s brought a revolutionary change in the management of inflammatory skin disorders.^[1] These compounds, derived from cortisol, provided dermatologists with a highly effective therapeutic option to treat a variety of skin conditions that were previously difficult to manage. Over the past several decades, numerous topical corticosteroids have been synthesized and classified into different categories based on their potency—ranging from mild (Class VII) to very potent (Class I)—allowing clinicians to tailor treatment depending on the severity, location, and duration of the dermatosis.^[2]

The first documented successful use of a topical steroid in treating human skin diseases was by Sulzberger and Witten in 1952.^[3] Their work demonstrated the efficacy of corticosteroids in reducing inflammation and improving symptoms in various skin conditions. This was followed by a major development in 1964 with the introduction of betamethasone valerate,^[4] a potent steroid that became a cornerstone in dermatological therapy due to its effectiveness and acceptable safety profile when used appropriately.

Topical corticosteroids have since become a mainstay in dermatology owing to their anti-inflammatory, antiproliferative, vasoconstrictive, antipruritic, and immunosuppressive properties.^[5] They are used in the treatment of a broad spectrum of skin disorders such as eczema, psoriasis, lichen planus, seborrheic dermatitis, vitiligo, and autoimmune dermatoses.^[6] Their popularity also stems from the rapid symptomatic relief they provide, particularly in reducing erythema, scaling, and itching.^[7]

However, despite their therapeutic advantages, the misuse and overuse of topical corticosteroids have emerged as major public health concerns, particularly in low- and middle-income countries like India.^[8] A

combination of easy availability, lack of regulation, limited awareness, and healthcare access challenges has led to the widespread misuse of these agents. This issue is especially pronounced in rural and semi-urban areas, where patients frequently rely on self-medication, local healers, or pharmacists rather than qualified dermatologists.^[9]

Among the various corticosteroids available in the Indian market, Clobetasol propionate, classified as a superpotent corticosteroid, is the most commonly misused.^[10] It is often applied on the face, despite clear contraindications for long-term or unsupervised facial use. Studies have shown that pharmacists and local healers account for nearly 78% of the sources for such misuse.^[11] These non-medical sources often dispense TCs without proper instructions, dosing, or duration guidelines, exacerbating the risk of complications.

Further compounding the problem is the widespread availability of irrational Fixed Dose Combinations (FDCs). These FDCs commonly include corticosteroids in combination with antifungal, antibacterial, and even whitening agents, marketed under various trade names with attractive packaging and claims of instant fairness or pimple relief.^[12] Many of these combinations lack

scientific merit, regulatory approval, or evidence-based indications. Inappropriate use of such FDCs not only fails to treat the underlying condition but may also mask symptoms, delay diagnosis, and increase the risk of resistant infections—most notably resistant dermatophytosis, which is now a major challenge in clinical practice across India.^[13]

The over-the-counter (OTC) sale of topical corticosteroids without prescription remains a major regulatory failure in the Indian pharmaceutical landscape. Despite the classification of many corticosteroids as Schedule H drugs (which require a prescription), enforcement is lax, and most pharmacies continue to sell them freely.^[14] This unregulated access is further facilitated by weak healthcare infrastructure, low dermatologist-to-patient ratios, and limited awareness among the general public.^[15]

One of the most frequently affected regions is South Rajasthan, where poor health literacy, cultural practices, and dependence on non-specialist advice have contributed to rampant misuse of TCs.^[16] People often apply corticosteroids for conditions like acne, melasma, tinea infections, or as fairness creams, unaware of the consequences of long-term use.^[17]

The chronic misuse of topical corticosteroids can result in a spectrum of cutaneous adverse effects, particularly when potent or superpotent agents are used on sensitive areas such as the face. These include acneiform eruptions, steroid-induced rosacea, perioral dermatitis, rebound erythema, telangiectasia, cutaneous atrophy, and pigmentary changes.^[18] These visible changes can be cosmetically disfiguring, especially when they affect the face, leading to psychological distress, embarrassment, low self-esteem, and anxiety.^[19] The face is a critical part of one's self-image and identity, and disfigurement can have far-reaching implications for mental health, interpersonal relationships, and social functioning.

Another well-recognized clinical consequence of TC misuse is Red Face Syndrome, also referred to as Topical Steroid-Dependent/Withdrawal Face (TSDf). This syndrome occurs when long-term facial use of potent corticosteroids is suddenly stopped, leading to rebound erythema, burning, itching, scaling, and skin sensitivity.^[20] Patients affected by TSDf often develop dependence, continuing the steroid just to prevent flares, thus perpetuating a cycle of addiction-like behavior.^[21]

Furthermore, attempts to discontinue corticosteroid use often lead to rebound worsening of symptoms, resulting in considerable psychological and physical distress.^[22] This distress can compel patients to resume use against medical advice, and many resist further withdrawal efforts.^[23] The cycle of misuse is difficult to break and requires active dermatological and psychological intervention.

The increasing incidence of TC misuse in India, particularly involving high-potency steroids, is therefore a multifaceted issue—encompassing not only medical and dermatological complications but also social, regulatory, and mental health dimensions.^[9,12,13,15] It reflects deeper systemic challenges, including inadequate public education, lack of regulatory oversight, fragmented primary healthcare, and insufficient dermatology services. Thus, to analyse the pattern of topical corticosteroids misuse we are going to conduct a prospective observational study among the patients who will attend the outpatient department of Dermatology in a Tertiary Care Centre in Western Rajasthan.

AIM AND OBJECTIVES

Aim: To study the prevalence, pattern and consequences of topical steroid misuse in patient attending the dermatological OPD at tertiary care centre in western Rajasthan.

1. Primary objectives

- To study the prevalence of the topical steroids misuse

2. Secondary objectives

- To study the consequences of the topical steroid misuse.

REVIEW OF LITERATURE

HISTORY

Corticosteroids are steroid hormones derived from adrenal gland or synthetically derived from it (1). Topical steroids belong to the glucocorticoids family of corticosteroids.^[24]

The first beneficial use of topical steroids in human dermatoses was reported in 1952 by Sulzberger and Witten.^[2] Though the first fluorinated compound was 9-alpha-fluorohydrocortisone acetate and it was successfully used topically in 1954, the real success came with flumethasone, fluoroandrenolone, and triamcinolone in the 1960s, which were much more potent than hydrocortisone. Betamethasone was a significant discovery, and the first topical use was reported in 1964.^[3] Betamethasone valerate was prepared by 1967, which was more potent than the parent compound.^[4]

Human vasoconstrictor assay (McKenzie and Stoughton) is one of the most commonly used methods for assessing potency of topical corticosteroids.^[5] This correlates well with clinical efficacy and outcome and thus forms the basis of the current classification system for topical corticosteroids.^[26]

As per the currently used potency-based classification system, topical steroids can be divided into 7 classes.^[6]

Class I superpotent corticosteroids include clobetasol propionate 0.05% in any vehicle, augmented betamethasone dipropionate 0.05% gel or ointment,

diflorasone diacetate 0.05% ointment, fluocinonide 0.1% cream, and halobetasol propionate 0.05% cream or ointment.^[27]

Class II high-potency corticosteroids include amcinonide 0.1% ointment, augmented betamethasone dipropionate 0.05% cream or lotion, betamethasone dipropionate 0.05% ointment, desoximetasone cream/gel/ointment, diflorasone diacetate 0.05% cream, fluocinonide 0.05% cream/gel/ointment, and halcinonide 0.1% cream/ointment/solution.^[28]

Class III medium- to high-potency corticosteroids include amcinonide 0.1% cream, betamethasone dipropionate 0.05% cream, fluticasone propionate 0.005% ointment, and triamcinolone acetonide 0.5% cream/ointment.^[29]

Class IV and V medium-potency corticosteroids include betamethasone valerate 0.1% cream/lotion/foam, desoximetasone 0.05% cream, fluocinolone acetonide 0.025% cream/ointment, fluticasone propionate 0.05% cream, hydrocortisone butyrate 0.1% ointment, hydrocortisone probutate 0.1% cream, hydrocortisone valerate 0.2% cream/ointment, mometasone furoate 0.1% cream/lotion/ointment, triamcinolone acetonide 0.025% cream/lotion/ointment, and triamcinolone acetonide 0.1% cream/lotion/ointment.^[30]

Class VI low-potency corticosteroids include alclometasone dipropionate 0.05% cream/ointment, desonide 0.05% in any vehicle, fluocinolone 0.01% cream, and hydrocortisone butyrate 0.1% cream.^[31]

Class VII least-potent corticosteroids include hydrocortisone 1% and 2.5% cream/lotion/ointment.^[32]

Factors affecting choice of corticosteroids include:

1. Anatomic area of application
2. Disease responsiveness
3. Severity of disease
4. Extent of body surface area involvement
5. Age of patients
6. Suitability of vehicle
7. Potency of corticosteroid molecule

A standardized fingertip unit (FTU) and rule of hand have been devised by Long and Finlay to measure the amount of ointment necessary to cover specific anatomic areas adequately.^[7]

ADVERSE EFFECTS

Various adverse effects occurring due to topical corticosteroids have been extensively published in the literature.^[33] They can be broadly classified as local and systemic adverse effects.^[8,9]

The immediate effects include stinging and irritation.

Effects on the epidermis are atrophy, hypo/hyperpigmentation, photosensitivity, loss of skin barrier, and premature ageing.^[10]

Topical steroids also adversely affect dermal functions such as wound healing and collagen formation, leading to telangiectasia, ulceration, delayed wound healing, striae, Bateman's purpura, easy bruising, and stellate scars.^[11]

Steroid-induced acne, rosacea, hypertrichosis, and alopecia are also adverse effects.^[12]

Steroids increase susceptibility to infection, leading to altered presentations such as scabies incognito, herpes incognito, impetigo incognito, and demodicidiosis.^[13]

Withdrawal of steroids frequently leads to rebound flares of psoriasis, reactivation of Kaposi's sarcoma, and rebound erythema of the face.^[14]

TSDF is a newly described entity associated with topical corticosteroid abuse.^[15] Steroid addiction, red burning skin syndrome, and status cosmeticus have been reported in the literature.^[16,17]

Systemic side effects include HPA axis suppression, new-onset diabetes mellitus, hypercalcemia, and iatrogenic Cushing's syndrome.^[9]

EPIDEMIOLOGICAL STUDIES

Thomas M, Sheth NK, et al. conducted a prospective observational study, where they found that Clobetasol propionate was the most common steroid misused. 80% of respondents having tinea had tinea incognito and 97% had extensive lesions. This study demonstrated that TS misuse was a significant public health issue in rural India with 3 out of 10 new dermatology outpatients using topical steroids inappropriately.^[16]

Out of general practitioners in the study, 22 (50%) were qualified allopathic medical practitioners and 22 (50%) were homeopathic and ayurvedic doctors. Among pharmacists, 74 out of 107 did not have appropriate knowledge of topical steroid, and 35 were not aware that topical steroid belonged to Schedule 'H' drugs.^[16]

In 2015, MB Mahindrakar et al. conducted a study where data was collected in the form of a designed proforma which included demographic, disease, and drug data. They found that periodic review of prescription was essential to increase therapeutic efficacy, decrease adverse effects, provide feedback to the prescribers, and analyze the observation of the standard of medical treatment. The study was not able to reflect demographic data of the population since it was a tertiary care hospital-based study.^[33] Although steroids were included under Schedule H drugs, which required proper prescriptions, inappropriate Fixed drug combinations containing potent topical steroids in combination with

antifungals and antibacterial were not in the same list.^[17] For pharmacists and local healers, Fixed drug combinations were prescribed as one- step answers to all skin conditions, regardless of the etiology of the disease (whether it was bacterial, fungal, or inflammatory). More studies, preferably multicentric studies especially covering the pharmacists, general practitioners, and the patients in large numbers, were needed to be conducted.^[16]

In the year 2015, a cross-sectional study was conducted by M. Santwana et al. to assess the prevalence of misuse of topical steroids. It was found that Betamethasone was the most commonly used topical steroid preparation, and Tinea incognito followed by Facial acne were the most common side effects experienced.^[34] The most popular brands in this study were Betnovate, followed by mixed preparations of Clobetasol Propionate with antifungal and antibacterial agents (Clobevate, Fourderm, Cortiderm). Prolonged and continuous use of topical corticosteroids on the face led to the development of dermatoses, which has been named as TSDF (topical steroids dependent face).^[18]

Another cross-sectional study was conducted by J. Sonal et al. where 53 males and 263 females presented with facial dermatoses during the entire study and Mometasone in the form of No scar preparation was the most commonly abused topical steroid.^[35] The problem was perpetuated by the unrealistic craze and want of fairer skin by people coupled with easy access to such products as cheap over-the-counter products.^[19]

Rastogi MK et al. performed a study among the outpatients seeking treatment for clinical diagnosis of TSDF.^[36] The present study showed that patients using superpotent topical steroid in TSDF (Topical steroid dermal facies) had maximal effect on QoL (Quality of life) compared to the patients using mid-strength or lower- mid strength steroids. The mean DLQI score of >11 represents a very large effect on the QoL in these patients. The main limitation of this study was a small sample size, single-centre study and non-calculation of formal sample size in the absence of any data regarding the prevalence of TSDF in Indian population.^[20]

MATERIALS AND METHODS

Study Design

This study was conducted as a **prospective observational investigation** with the primary objective of assessing the **prevalence, usage patterns, and clinical consequences** of topical corticosteroid misuse. The study documented the frequency of misuse, identified common trends such as type of formulation used, duration and mode of application, source of procurement, and evaluated the associated dermatological and systemic manifestations. As an observational study, no modification of patient management was undertaken, and all information was collected prospectively in accordance with the inclusion

and exclusion criteria.

Study Setting

The study was carried out in the Department of Pharmacology, in collaboration with the Department of Dermatology, at Dr. S. N. Medical College, Jodhpur, and its affiliated MDM Hospital. Being a tertiary care centre, the hospital served as a major referral institution for Western Rajasthan, catering to a large and diverse patient population, thereby providing a representative sample for assessing topical steroid misuse in the region.

Study Period

Data collection was undertaken over a four-month period, from **April 2025 to July 2025**, following approval from the Institutional Ethics Committee of Dr. S. N. Medical College, Jodhpur, and after obtaining prior permission from the Head of the Department of Pharmacology and head of the department of dermatology. Participants Patients attending the Dermatology outpatient department (OPD) during the study period were screened for eligibility.

- **Inclusion criteria**

1. Patients with a documented history of topical corticosteroid use who presented with dermatological complaints.
2. Patients attending the Dermatology OPD for other skin conditions who exhibited clear clinical signs suggestive of topical corticosteroid misuse.

- **Exclusion criteria**

1. Patients who were unwilling to provide informed consent for participation.
2. Pregnant women and patients with comorbidities that could produce clinical features similar to those of corticosteroid misuse (e.g., Cushing's syndrome, hypertension, diabetes mellitus).

- **METHODOLOGY**

- This was a prospective observational study conducted at the Dermatology outpatient department of a tertiary care hospital in Western Rajasthan. Data were collected from 235 patients who met the inclusion criteria during the study period. Information regarding demographic details, clinical presentation, history of topical steroid use, and occurrence of side effects was recorded in a structured case record form. Patients unwilling to participate or those with confounding comorbidities were excluded. Written informed consent was obtained from all participants prior to enrolment.

- **Statistical Analysis**

- Data were entered into Microsoft Excel and analyzed using **SPSS version 31** (or an equivalent statistical software). Descriptive statistics such as frequency and percentage were used to summarize categorical variables. The **Pearson Chi-square test**

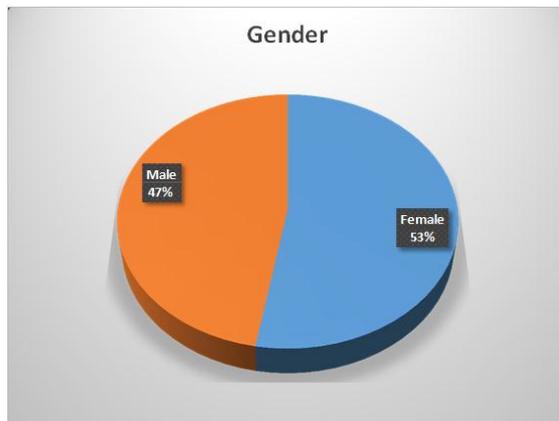
was employed to assess the association between topical steroid use and the occurrence of side effects. A *p*-value of less than 0.05 was considered statistically significant.

All participants in the study were categorized as **Level 2** on the Modified Hartwig and Siegel Scale, indicating **mild severity** of adverse drug reactions. Since there was no variability in scores, further statistical comparison was not applicable.

OBSERVATIONS AND RESULTS

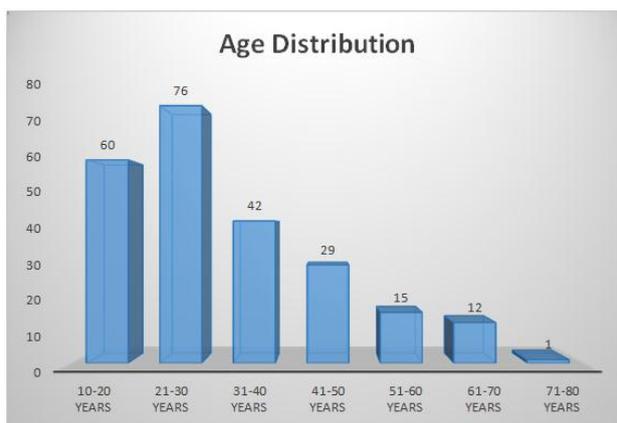
Gender	Frequency	Percentage
Female	124	52.77%
Male	111	47.23%
Total	235	100.00%

Out of 235 patients, 124 (52.77%) were females and 111 (47.23%) were male.



Age Group	Frequency	Percentage
10-20 Years	60	25.53%
21-30 Years	76	32.34%
31-40 Years	42	17.87%
41-50 Years	29	12.34%
51-60 Years	15	6.38%
61-70 Years	12	5.11%
71-80 Years	1	0.43%
TOTAL	235	100.00%
Mean Age : 31.59±14.24		

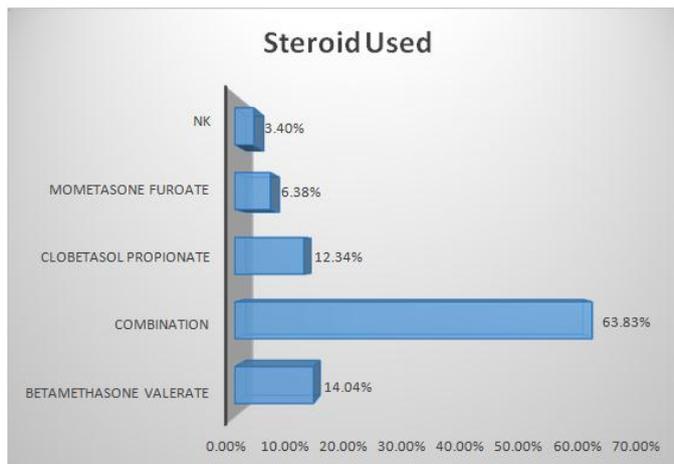
A total of 235 patients were included in the study. The age range of patients was from 12 years to 75 years with mean age of 31.59 years.



Steroid	Frequency	Percentage
Betamethasone Valerate	33	14.04%
Combination	150	63.83%
Clobetasol Propionate	29	12.34%
Mometasone Furoate	15	6.38%
NK not known	8	3.40%
Total	235	100.00%

Out of 235 patients, maximum 150 (63.83%) patients received combination cream, 33 (14.04%) received betamethasone valerate, 29 (12.34%) received Clobetaso

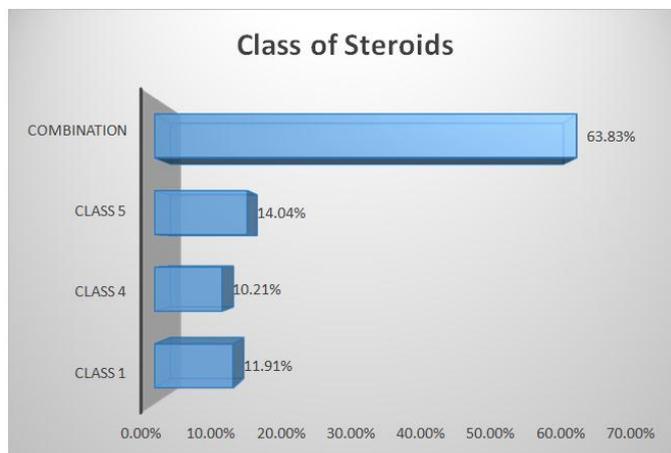
Propionate, 15 (6.38%) received mometasone furoate and 8 (3.40%) received NK.



Class	Frequency	Percentage
Class 1	28	11.91%
Class 4	24	10.21%
Class 5	33	14.04%
Combination	150	63.83%
Total	235	100.00%

Most of the Steroids were used in combination 150 (63.83%), 28 (11.91%) used Class 1 steroids, 24

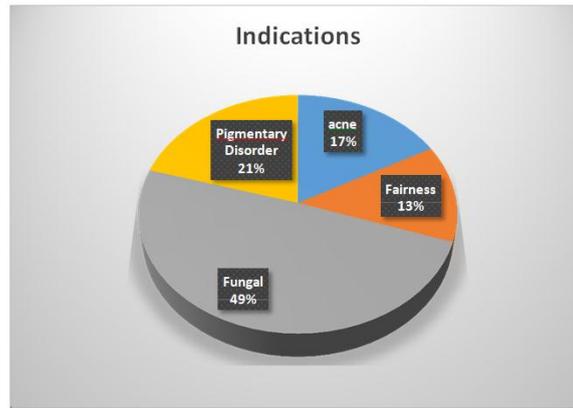
(10.21%) used Class 4 steroids and 33 (14.04%) used Class 5 steroids.



Indication	Frequency	Percentage
Acne	40	17.02%
Fairness	31	13.19%
Fungal	116	49.36%
Pigmentary Disorder	48	20.43%
Total	235	100.00%

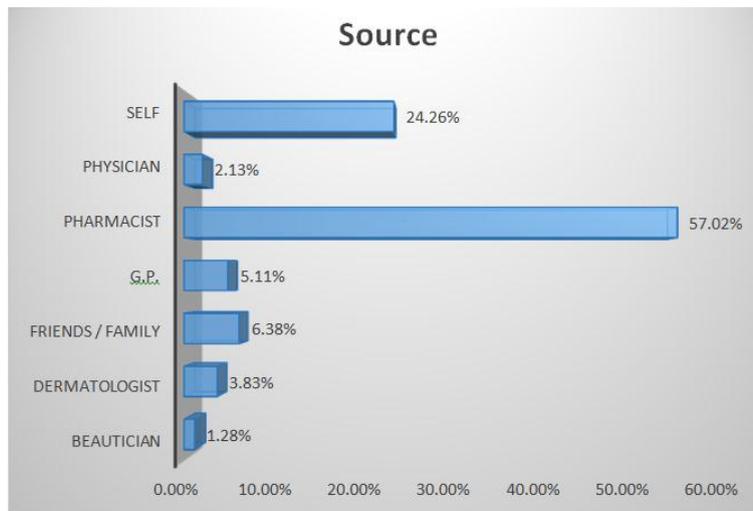
Most common reason for prescription / advice for steroid was fungal infection (49.36%) followed by Pigmentary

disorder (20.43%), Acne (17.02%) and Fairness (13.19%).



Source	Frequency	Percentage
Beautician	3	1.28%
Dermatologist	9	3.83%
Friends / Family	15	6.38%
G.P.	12	5.11%
Pharmacist	134	57.02%
Physician	5	2.13%
Self	57	24.26%
Total	235	100.00%

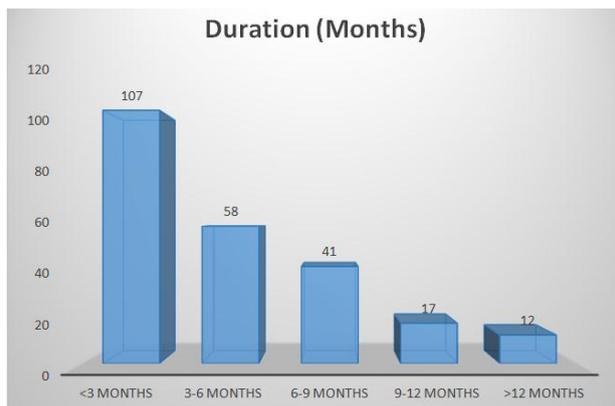
In maximum cases, source of steroid advice was pharmacist (57.02%), Whereas 24.26% taken as per self requirement.



Months	Frequency	Percentage
<3 months	107	45.53%
3-6 months	58	24.68%
6-9 months	41	17.45%
9-12 months	17	7.23%
>12 months	12	5.11%
Total	235	100.00%

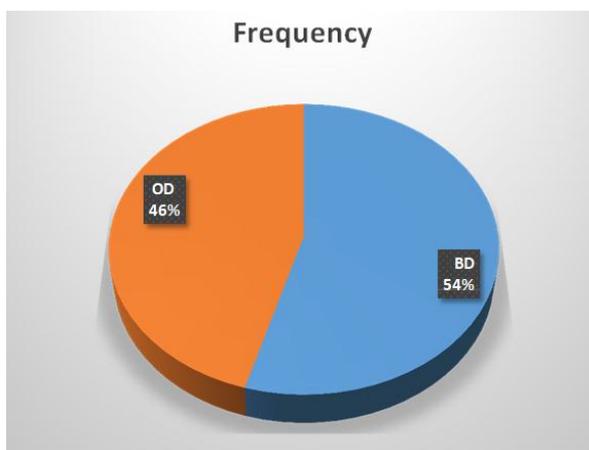
The duration was less than 3 months in maximum (45.53%) patients, 3-4 months in 24.68% patients, 6-9

months in 17.45% patients, 9-12 months in 7.23% patients and more than 12 months in 5.11% patients.



Frequency	Frequency	Percentage
BD	128	54.47%
OD	107	45.53%
Total	235	100.00%

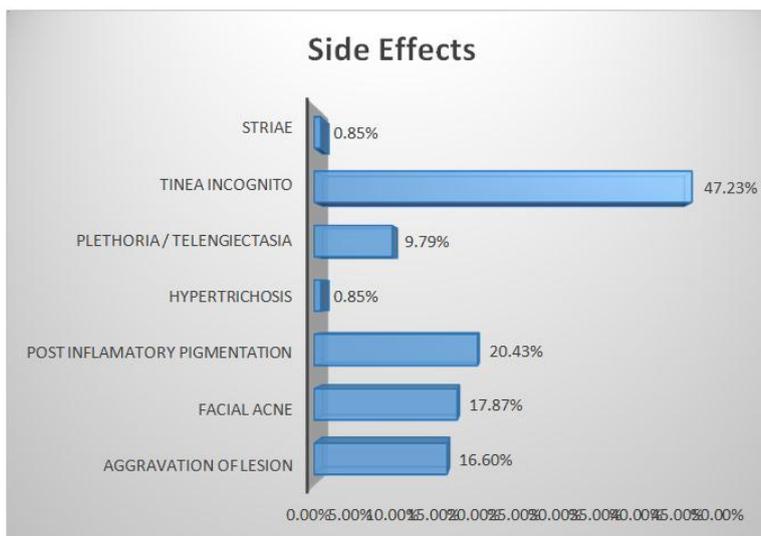
54.47% patients were advised with BD while 45.53% were advised with OD.



Side effects	Frequency	Percentage
Aggravation of Lesion	39	16.60%
Facial Acne	42	17.87%
Post Inflammatory Pigmentation	48	20.43%
Hypertrichosis	2	0.85%
Plethora / Telangiectasia	23	9.79%
Tinea Incognito	111	47.23%
Striae	2	0.85%

Most common side effect observed in this study was Tinea Incognito (47.23%), Aggravation of Lesion in 16.60%, Facial Acne in 17.87%, Post Inflammatory

Pigmentation in 20.43%, Hypertrichosis in 0.85% and Plethora / Telangiectasia in 9.79% patients.



Chi-Square Test was carried out to test the association between Steroid Use and Side Effects. From above table, we can observe that P-Value is less than 0.05. Hence, we

can conclude that there is significant association observed between Steroid use and Side effects.

Chi-Square Tests			
	Value	df	P-Value
Pearson Chi-Square	38.303	24	0.032
N of Valid Cases	235		



TOPICAL STEROID DERMAL FACIES





STERIOD MODIFIED DERMATOPHYTOSIS (TINEA)

DISCUSSION

The present study offers valuable insight into the widespread and largely unregulated use of topical corticosteroids (TCS), particularly among young adults and females, mirroring trends observed in various Indian and international studies.

Demographic Patterns and Vulnerable Populations

The majority of patients misusing topical steroids in this study were females (52.77%), with the highest prevalence in the 21–30 years age group (32.34%). These findings align with previous studies by Nyati *et al.*,^[37] who reported a higher proportion of females (72.68%) misusing TCS in Kota, and by Saini B *et al.*,^[38] where 43.8% of misusers were teenagers and 76.3% were female. This gender and age distribution may be attributed to the pursuit of cosmetic enhancement, particularly fairness and acne control, often influenced by societal norms, media, and peer advice.

Indications and Inappropriate Use

Our study highlights that fungal infections (49.36%) were the leading indication for TCS use, followed by pigmentary disorders (20.43%), acne (17.02%), and use

as fairness creams (13.19%).^[38] This misuse of steroids for dermatophytoses is well-documented in Indian literature. Verma SB *et al.*^[40] and Kumar P *et al.*^[41] both reported the inappropriate use of steroid-containing fixed-dose combinations (FDCs) for treating superficial fungal infections, leading to the emergence of tinea incognito, steroid-modified lesions, and resistance.^[42-46]

Cutaneous Adverse Effects

A wide spectrum of side effects was observed, with tinea incognito (47.23%) being the most common, followed by post-inflammatory hyperpigmentation (20.43%), facial acne (17.87%), and aggravation of lesions (16.60%). These findings are consistent with the study by Coondoo *et al.*,^[47] where misuse of potent steroids led to adverse outcomes like steroid-induced dermatitis, rosacea-like eruptions, and skin thinning. In some cases, prolonged use can result in topical steroid withdrawal syndrome (TSWS), particularly when high-potency steroids like clobetasol are discontinued abruptly.^[48]

Steroids Used and Combination Creams

A significant majority (63.8%) of patients in our study used combination creams, primarily containing

clobetasol propionate (12.34%), mometasone furoate (6.38%), and betamethasone valerate (14.04%). Similar trends have been reported by Parsad and Dogra,^[49] who noted that irrational FDCs containing potent corticosteroids are readily available in India and are commonly misused due to lack of awareness and aggressive marketing strategies.^[50-52] The unregulated availability of these creams allows for their use without medical supervision, contributing to chronic misuse.^[53]

Duration of Use and Source of Access

Approximately 45.53% of users reported steroid use beyond 3 months, significantly increasing the risk of long-term adverse effects. The most common source of these steroids was pharmacists (57.02%),^[54] followed by self-use (24.26%) and non- medical advice from friends (6.38%) or beauticians (1.28%). This distribution aligns with the study by Chaudhary *et al.*,^[55] which pointed to poor regulatory control and lack of pharmacist education as key contributors to the problem.

LIMITATIONS

Being a single-centre, hospital-based study, the findings may not be entirely representative of the general population. Patients who misuse topical corticosteroids but do not seek dermatological consultation remain unaccounted for, thereby introducing selection bias.

The data heavily relied on self-reported histories regarding the type, duration, and frequency of steroid use, which may have led to recall bias in some cases.

The exclusion of specific patient groups such as pregnant women and those with comorbidities may have limited the diversity of clinical presentations captured. Although a Knowledge, Attitude, and Practice (KAP) questionnaire was administered, its detailed analysis was beyond the current study scope.

The absence of validated tools like the Dermatology Life Quality Index (DLQI) limited the ability to quantify psychological and quality-of-life impacts. Lastly, the study did not involve an assessment of prescribing practices among pharmacists or general practitioners—key stakeholders often involved in the irrational use of topical steroids

SUMMARY

A prospective observational study was conducted in the Department of pharmacology in collaboration with department of Dermatology at a tertiary care hospital in Western Rajasthan. The aim of the study was to assess the prevalence, patterns, and consequences of topical corticosteroid misuse among patients attending the outpatient department. The study included 235 patients who presented with a history of topical steroid use, either prescribed or self-initiated. After obtaining informed consent, a detailed history was recorded, including the indication, duration, source, and type of steroid used, followed by thorough clinical examination to document

cutaneous side effects and patterns of misuse. The observations made during the study provide critical insight into the irrational and unsupervised use of topical corticosteroids and its dermatological impact. Out of 235 patients included in the study, 124 (52.77%) were females and 111 (47.23%) were males, indicating a female predominance in topical corticosteroid misuse. This gender distribution suggests that females may be more inclined to use topical steroids, often influenced by cosmetic concerns such as fairness, pigmentation, or acne. The data reflects a broader social trend in which beauty standards and peer influence disproportionately affect women, making them more vulnerable to misuse.

The majority of patients (32.34%) belonged to the 21–30 years age group, followed by 10–20 years (25.53%) and 31–40 years (17.87%). This highlights that young adults and adolescents are the most affected groups. The mean age was 31.5 years, with the youngest being 12 years and the oldest 75 years. These findings suggest that early adulthood is a critical period for steroid misuse, likely due to increased concern about appearance, self-image, and exposure to unregulated advice via peers or online platforms.

The most common indication for topical steroid use was fungal infections (49.36%), despite the well-documented risks of using steroids in such cases. This was followed by pigmentary disorders (20.43%), acne (17.02%), and fairness (13.19%). The high rate of steroid use for fungal infections indicates a serious lack of awareness among the public and highlights the rampant misuse of steroid-containing antifungal combinations, which can worsen infections and delay appropriate treatment.

Steroid misuse resulted in a wide range of adverse cutaneous effects. The most frequently observed side effect was tinea incognito (47.23%), followed by post inflammatory (20.43%) and facial acne (17.87%). Less common but significant effects included telangiectasia/plethora (9.79%), hypertrichosis (0.85%), and atrophy or striae (0.85%). These adverse effects reflect the damaging impact of prolonged or inappropriate use of mid- to high-potency steroids, especially in unsupervised settings.

A majority of the patients (63.8%) were using combination creams that included corticosteroids along with antifungals and/or antibacterials. Among individual steroids, betamethasone valerate (14%), clobetasol propionate (12.3%), and mometasone (6.4%) were commonly used. These findings suggest a heavy dependence on fixed-dose combination (FDC) creams, many of which are irrational and marketed without proper medical justification. Their misuse reflects both marketing failures and regulatory lapses.

A significant number of patients (45.53%) had been using steroids for less than 3 months, with 17.45 % using them for 6–9 months and 7.2% using for 9 months or

more. Prolonged use increases the risk of dependency, withdrawal symptoms, and chronic cutaneous damage. It also indicates that many users are unaware of the recommended short-term use of corticosteroids and lack access to proper medical advice.

The most common source of steroid products was pharmacists (57.02%), followed by self-use (24.26%), and advice from friends/family (6.3%), general practitioners (5.1%), and beauticians (1.2%). Only 3.8% of patients received steroids on a dermatologist's advice, revealing a serious gap in medical supervision. This indicates unregulated over-the-counter sales and emphasizes the need for stricter pharmacy practices and public education to ensure safe usage.

CONCLUSION

The study clearly shows that topical steroid misuse is highly prevalent, especially among young adults and females, and is largely driven by unregulated access, misinformation, and cosmetic desires. The overuse of combination creams, prolonged duration of application, and serious dermatological side effects point to a pressing public health issue. There is an urgent need for regulatory reform, restriction of irrational FDCs, public awareness campaigns, and strengthened dermatological supervision to combat this growing problem effectively.

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