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Clinico-epidemiological study of topical steroid damaged/dependent face with special reference to dermoscopy at a tertiary care center in eastern Bihar

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Abstract

Background- The term "TSDF" denotes the lasting or permanent damage to the facial skin resulting from the irrational, indiscriminate, unsupervised, or prolonged use of TCs, leading to a broad range of cutaneous signs and symptoms, as well as psychological dependency on the drug. An increasing number of cases were reported over the years, and various terms were employed to describe this condition, such as red skin syndrome, dermatitis rosaceiformis steroidica, and steroid-induced rosacea-like dermatitis. Cessation of long-term topical steroid use invariably results in the reappearance of erythema, burning, and scaling. Additionally, other observed adverse effects include hypertrichosis, steroid rosacea, telangiectasia, perioral dermatitis, tinea incognito, demodicosis, and acneiform eruptions. These effects arise from the multifaceted impact of topical steroids, which possess sex-hormone-like and melanopenic properties.

Aims and objectives- The use of TCS is very rampant in India because of over the counter availability so it is important to find out the effects on facial skin according

to potency and duration of TCS use and also the data on the effects of TCS use is scarce. Our aim is to observe the changes in facial skin due to TCS use and also the changes in dermoscopy.

Methods- This is an institution-based cross-sectional descriptive study where all patients approaching on out-patient basis in D.V.L department and having key features of topical steroid damaged/dependent face with history of topical steroid application was included in the study. A prior written consent was obtained from all patients. A predefined and standard proforma comprising personal details, clinical history, family history, medical treatment history and examination details was filled for every patient. At the end, the results was compiled and tabulated in a master file with eventual statistical analysis by conventional statistical methods.

Results- A total of 100 patients of TSDF were included in the study. Maximum age of patients: 48 years, minimum age: 13 years. Mean age of patients: 24.0900+/-7.9583 years. Median age of patients: 22 years. Predominantly (92%) patients were female. Maximum patients belonged to 11-20 years (45%) followed by 21-30 years (33%). Maximum patients were illiterate (47%) followed by primary educated (43%). Maximum patients were housewife (44%) followed by unemployed (32%) and student (20%).Half of the patients belonged to lower middle class and other half belonged to lower socioeconomic status. Maximum patients used Clobetasol (45%) either in single formulation or in combination with antibacterial, antifungal or keratolytic. 31% patients used Betamethasone either single formulation or double. 21% patients used Triple combination of Hydroquinone, Mometasone, Tretinoin. Majority (93%) patients applied steroid once daily while 7% applied twice daily. Most of the patients (59%) used steroid for more than 1 year and 20% used for less than 6 months. Maximum duration of usage was 20 years and minimum duration was 2 months. Mean duration of steroid usage was 22.21 months and median duration was 12 months. Most common reason for using topical steroid was fairness (53%) followed by melasma (20%) and acne (15%). Most common source was local practitioners (33%) followed by relatives (26%).Most common complaint of patients was itching (76%) followed by erythema (63%), burning sensation (63%), photosensitivity (60%).Commonly encountered signs were telangiectasia (51%), hypertrichosis (44%) and acneiform eruption (39%). Rare finding was crusting and pityriasis versicolor (1%). Hypertrichosis was the commonest dermoscopic finding (57%), followed by serpentine vessels (55%), red diffuse areas (51%), branched vessels (45%) and brown globules (42%).Rare dermoscopic findings were white hair (7%), brown diffuse areas (2%), scales (2%) and crusts (1%).

Conclusion- Topical steroid damage to the face is an entity on the surge due to the easy availability of steroid creams over the counter and their low cost. Patients tend to purchase them on the advice of pharmacists, neighbors, friends, and relatives and are satisfied with their rapid effects. Based on clinical characteristics, the topical steroid-damaged face entity is similar to rosacea, lupus erythematosus, and tinea faciei; thus, the dermoscopic assessment will aid in the proper and rapid diagnosis of topical steroid damage to the face.

Keywords: Clobetasol, Mometasone, Tretinoin

Introduction

TSDF is defined as the reversible or irreversible damage to the skin of the face caused by an usually unsupervised

misuse / abuse / overuse of TCS of any potency, on the face over an unspecified and / or prolonged period of time resulting in a plethora of cutaneous signs and symptoms and psychological dependence on the drug.[1]

Topical Corticosteroids (TCS) are potent drugs with widespread actions ranging from anti- inflammatory, immunosuppressive to anti-pruritic and melanopenic effects on skin. TCS if used under medical supervision, can be of enormous benefit. But this magic drug can cause enough mischief if used inappropriately and soon proved to be a double edged sword.

This lead to an emerging pharmaceutical industrial market of manufacturing multipurpose topical corticosteroid creams resulting in a vicious circle of increasing demand and cheap supply ending in abuse. After an alarming rise of TCS abuse this entity was labelled as "Topical Steroid Dependent/Damaged Face" (TSDF) in 2008.[2]

In the United States classification system, there are 7 classes categorized based on potency, ranging from minimum to maximum potency.

Class 1: Super-potent: Examples include Halobetasol propionate 0.05% cream/ointment and Clobetasol propionate 0.05% with any vehicle.

Class 2: High potent: Includes Betamethasone dipropionate 0.05% cream/lotion/ointment and Fluocinonide 0.05% cream/gel/ointment.

Class 3: Medium-high potency: Examples are Triamcinolone acetonide 0.5% cream/ointment and Fluticasone propionate 0.005% ointment.

Class 4/5: Medium potent: Includes Betamethasone valerate 0.1% cream/lotion/foam, Fluocinolone acetonide 0.025% cream/ointment, Mometasone furoate 0.1% cream/lotion/ointment, and Hydrocortisone butyrate 0.1% ointment.

Class 6: Low potency: Desonide 0.05% in any vehicle, Hydrocortisone butyrate 0.1% cream.

Class 7: Least potent: Hydrocortisone 1% cream/lotion/ointment.[3]

The indications for steroid topical use in dermatologic practice include in patients with atopic dermatitis, contact dermatitis, psoriasis, lichenoid disorders, seborrheic dermatitis, pemphigus foliaceus, bullous and cicatricial pemphigoid, morphea, DLE, vitiligo. Drastic improvement in severe inflammatory dermatoses is secondary to the potent anti-inflammatory property. These anti-inflammatory properties also help in the resolution of symptoms in infectious disorders such as dermatophyte infections for a short term, which is also one of the reasons for its misuse.[4]

A principal source of misuse of TCs is the salesmen in the chemist shops. The problem is further compounded by the fact that most TCs are available at nominal price as over-the-counter (OTC) products.[5] Apart from these salesmen, patients also apply TCs on the recommendation of friends, neighbors, and relatives without consulting doctors at all.[6] The greatest (mis) users of TCs are laymen specially young women who are the victims of the wave of fairness craze sweeping across the land. TCs either singly or as components of the "modified Kligman's formula" are used rampantly as fairness creams. This craze is fanned by a general impression particularly in the Indian society that "black is ugly". In its totality, the Indian scenario regarding the misuse of topical steroid on face is very dismal and disturbing.[1]

Facial epidermis is comparatively thinner i.e. 0.12 mm than the rest of the body which is 0.60 mm thick on an average. This results in increased percutaneous absorption of drugs. Also the face has a profuse blood

supply which increases incidence of side effects. Last but not the least face is the most visible part of human body making it vulnerable to the ill effects of environmental factors – sunlight, pollution. Thus leading to imprudent use of numerous substances and drugs such as TCS. [2]

Use of TCS on the face produces different adverse effects such as steroid rosacea, acneiform eruption, hypertrichosis, telangiectasia, perioral dermatitis, demodicidosis, steroid addiction, dermatitis rosaceaformis steroidica and red face syndrome. Red face syndrome is a condition where any attempted cessation of the application of TCS on the face after prolonged use, leads to rebound erythema, burning and scaling on the face[4]These effects are due to the multimodal effects of topical steroids owing to sex-hormone like and melanopenic effects. Topical steroid damaged face not only causes local side effects but also it affects the patient systemically and psychologically.[3]

Dermoscopy, also recognized as skin surface microscopy, has been utilized for the assessment of suspicious lesions. Visualization is possible up to the reticular dermis layer. The fundamental concept of the dermoscope involves the magnified visualization and transillumination of intricate features of a lesion.[3] Dermoscopy can act as the modernday instrument for early detection of subclinical signs of TSDF by delineating characteristic features such as polygonal vessels and telengiectasias, structureless white areas (atrophy), hypertrichosis, scales, and erythema.[7]

Aims and Objectives

Aims- The use of TCS is very rampant in India because of over the counter availability so it is important to find out the effects on facial skin according to potency and duration of TCS use and also the data on the effects of TCS use is scarce. Our aim is to observe the changes in facial skin due to TCS use and also the changes in dermoscopy.

Objectives of the study

1. To ascertain the demographic profile of topical steroid damaged/dependent face.
2. To detect the changes of facial skin due to topical corticosteroid misuse and to correlate with potency and duration of application of its use.
3. To observe the dermoscopic features of topical steroid damaged/dependent face.

Materials and Methods

This was an Institution-based cross-sectional descriptive study, conducted at the OPD of D.V.L, Mata Gujri Memorial Medical College & L.S.K. Hospital, Kishanganj, Bihar, India, with a prior approval from the Institutional Ethics Committee. All patients of topical steroid damaged/dependent face attending the outpatient department of D.V.L. for the first time was included. The length of study was from 1st September, 2022 to 30th April , 2024. All consecutive cases with cardinal features of TSDF was recruited after execution of written consent by following the defined inclusion and exclusion criteria. A total 100 patients were included in the study.

Inclusion criterion

1. Confirmed cases of topical steroid damaged/dependent face by history and clinical examination
2. Patients aged 12 years and above of either gender was incorporated in the study.
3. Patients who have applied TCS more than 4 weeks.
4. Execution of informed written consent.
5. The patient should be applying steroid on face within 15 days of presentation to the OPD.

Exclusion criterion

1. Patients who have taken treatment for topical steroid damaged/dependent face within last 6 months.
2. Pregnant and lactating patients.
3. Patients who are on oral steroids for any reason.
4. All patients having TSDF mimicking facial dermatoses.
5. Patients with co-morbidities similar to TC adverse effects.

All patients approaching on out-patient basis in D.V.L department using TCS and having key features of topical steroid damaged/dependent face was included in the study. A prior written consent was obtained from all patients. A predefined and standard proforma comprising personal details, clinical history, family history, medical treatment history and examination details was filled for every patient. The obtained data were tabulated in Microsoft Excel Software [version Microsoft Excel 2021 MSO (Version 2212 Build 15911.20000)64-bit] and analysed. The results were described employing various tables, graphs, etc.

Result

A total of 100 patients of TSDF were recruited in the study. The most prevalent age group was 11-20 years (45%) followed by 21-30 years (33%) then 31-40 years (20%). predominantly the patients were female (92%). 47% patients were illiterate while 43% patients had primary education. 44 % patients were housewives while 32% were unemployed and 20% were students. 50% patients belonged to lower class and 50% to lower middle class. The most commonly misused steroid was Clobetasol (45%) followed by Betamethasone (31%) and then Mometasone (24%). 24% patients used Clobetasol alone while 21 % patients used Clobetasol in combination formulation with Gentamicin/ Neomycin/ Miconazole/ Salicylic acid. Likely 11% patients used Betamethasone alone while 20% used it in combination with Clioquinol. 21% patients used Triple combination formulation (Hydroquinone+Tretinoin+ Mometasone). 45% patients used potency 1, 24% used potency 4 and 31% used potency 5. Remaining classes of steroids were not used. Most patients (30%) used TCS for 1-2 years while 29% used for more than 2 years, 21% used for 6 months to 1 year and 20% for less than 6 months. 93% patients applied steroids once daily as night cream and 7% applied twice daily.

Commonest reason for application of TCS by patients was fairness (53%) followed by melasma (20%) , acne (15%), post inflammatory hyperpigmentation(8%) and Tinea(4%). Commonest source of information of steroid was local practitioners (33%), relatives (26%), friends (19%), pharmacy (15%) and neighbour (7%).

The commonest presenting feature of patients was itching (76%) followed by erythema (63%), burning sensation (63%), photosensitivity (60%), skin darkening (28%) and scaling (12%). Commonest signs examined were telangiectasia (51%), hypertrichosis (44%), acneiform eruption (39%), atrophy (28%), rosacea (24%), scaling (14%), perioral dermatitis (13%), folliculitis (7%) and pigmentatry changes (29%).

Among the dermoscopic findings the commonest was hypertrichosis (57%), followed by serpentine vessels (55%), red diffuse areas (51%), branched vessels (45%), brown globules (42%), structureless white areas (28%), follicular plugging (22%), Y-shaped vessels (21%), linear vessels without branches (20%), pustules (17%), comedones (9%), polygonal vessels (8%). Among other rare dermoscopic findings, 7% patients had white hair, 2% had brown diffuse areas and 2% had scales and crust (1%).

Table 1: Age in TSDF patients

Age in Group	Frequency	Percent
11-20	45	45%
21-30	33	33%
31-40	20	20%
≥41	2	2%
Total	100	100%

Table 2 : Sex in TSDF patients

Sex	Frequency	Percent
Female	92	92%
Male	8	8%
Total	100	100%

Table 3 : Educational Status in TSDF patients

Educational Status	Frequency	Percent
Higher Secondary	6	6%
Primary	43	43%
Secondary	4	4%
Uneducated	47	47%

Table 4: Occupation in TSDF patients

Occupation	Frequency	Percent
Farming	1	1%
House Wife	44	44%
Manual Labour	3	3%
Unemployed	32	32%
Student	20	20%
Total	100	100%

Table 5: Name of the steroid used by TSDF patients

Name of the steroid	Frequency	Percent
Betnovate	11	11%
Betnovate C	20	20%
Cosvate	24	24%
Cosvate GM	8	8%
Cosvate, Betnovate	1	1%
Dermikem	1	1%
Elosone	12	12%
Medisalic	6	6%
Panderm	6	6%
Skinbrite	1	1%
Skinlite	4	4%
Skinshine	4	4%
Twinkle	2	2%

Table 6: Formulation of steroid used by TSDF patients

Formulation	Frequency	Percent
Betamethasone	11	11%
Betamethasone + Clioquinol	20	20%
Clobetasol	24	24%
Clobetasol + Betamethasone	1	1%
Clobetasol + Gentamicyn	8	8%
Clobetasol + Neomycin + Miconazole	7	7%
Clobetasol + Salicylic Acid	5	5%
Hydroquinone + Tretinoin + Mometasone	21	21%
Mometasone	3	3%
Total	100	100%

Table 7: Reason of use of steroid by TSDF patients

Reason of use	Frequency	Percent
Fairness	53	53%
Melasma	20	20%
Acne	15	15%

Post inflammatory hyperpigmentation	8	8%
Tinea	4	4%
Total	100	100%

Table 8: Duration of application of steroid by TSDF patients

Duration (in months)	No. of patients	Percentage
< 6	20	20%
6-12	21	21%
12-24	30	30%
>24	29	29%

Table 9: Sources of information

Source	Frequency	Percent
Friends	19	19%
Local practitioner	33	33%
Neighbour	7	7%
Pharmacy	15	15%
Relative	26	26%
Total	100	100.0%

Table 10: Symptoms in TSDF patients

Symptoms	Percentage
Erythema	63%
Itching	24%
Burning	63%
Photosensitivity	60%
Scaling	12%
Skin darkening	28%

Table 11: Signs in TSDF patients

Signs	Percentage
Atrophy	28%
Telangiectasia	51%
Hypertrichosis	56%
Perioral dermatitis	13%
Rosacea	24%
Acneiform eruption	39%
Hypo/Hyperpigmentation	27%
Scaling	14%
Folliculitis	7%

Table 12: Dermoscopic findings in TSDF patients

Dermoscopic features	Percentage
Linear vessels without branches	20%
Serpentine vessels	55%
Polygonal vessels	08%
Branched vessels	45%
Y-shaped vessels	21%
White areas	28%
Brown globules	42%
Red diffuse areas	51%
Follicular plugging	22%
Pustules	17%
Comedones	09%
Hypertrichosis	57%

Discussion

In our study, out of 100 patient's majority number of the patients were 11-20 years old (45.0%) followed by 21-30 years (33%). Similar study by Mamatha P *et al* in a tertiary center in South India, the age group most affected was individuals between 18 and 30 years old (52; 65%).[8] Similar finding was observed in study by Dey VK where the most affected age group was between 10-29 years old (> 65%).[9]

We found that, females (92.0%) were higher than the males (8.0%). This is because females are more conscious about their looks and willing to be fair. Similar findings were observed by Sethi S (81.8 %)[7] , Kushwah S *et al* (90%)[10], Dhafiri M *et al*, (80.9%)[11] and by Jain S *et al*, (83.22%).[12]

Majority of the patients were illiterate (47%) followed by Primary passed (43.0%). As they are easily convinced by people. It differed from the study by Chauhan S *et al* in which the percentage of educated TSDF patients were 81.3%[13] and by Dey VK, 18.73% patients were illiterate and 50.92 % were high school passed.[14]

It was found that, most of the patients were housewife 44% and 32% were unemployed and 20 % were students. As they get much free time and want to try more things which are easily available to beautify themselves. Similar findings was observed in a study by Kushwah S *et al*, where most of the patients were housewife (51.3%) [10] and Chauhan S *et al* where 45.33 % patients were housewives[13] and by Inakanti Y *et* al, most of patients are house wives (49.2%) followed by Employee (23.8%), then by student (20.8%) and staff nurse (3.8%).[15]

It was seen that equal number of patients were Lower Class and Lower Middle Class (50.0%). This institution is situated in such area where the socioeconomic status is lower and people are mostly uneducated.

In our study 24 % patients used Clobetasol alone while 8% patients used Clobetasol with Gentamicin formulation, 7% used Clobetasol, Neomycin and Miconazole formulation, 5% Clobetasol with Salicylic acid, 11% Betamethasone, 20% Betamethasone with Clioquionol, 1 % patients used both Betamethasone and Clobetasol and 21% patients used Triple combination. There are differences in generic molecules due to availability and cheaper steroid combination creams were used mostly by the patients. Similar finding in study by Besra L *et al*, most of the patients used Clobetasol (48%)[16] and by Gupta M, 31% patients used Clobetasol followed by 28 % patients used Betamethasone.[17] and by Thomas M *et al*, 58.2% patients used Clobetasol followed by Betamethasone 31.7%.[18] But in contrary to our study, study by Ravindran S *et al* showed 34% patients used Betamethasone, 28% patients used Mometasone, 12% used Clobetasol.[19]

We found that, a greater number of patients applied topical corticosteroid once daily [93 (93.0%)]. In contrary to study by Meena S *et al* in which 95% patients applied steroid twice daily.[20] This is because the patients had a tendency to apply them as a night cream.

In our study,majority of the patients (59%) used steroid for more than 1 year, 21% for 6-12 months, 20% used for <6 months. The patients were unaware of the adverse effects of topical steroids. Similar finding observed by Ankad BS *et al*, 45.71% patients used steroid for more than a year.[21] Contrary to our study Nyati A *et al* found 71% patients used steroid for 1-6 months and 15.82% for more than a year[22] and 55.5% patients used steroids for <6 months and 20.5% patients used for >1 year in a study conducted by Payal P *et al.*[23] probably their study population's educational status was better and they were more aware about steroid side effects.

In our study, majority of the patients have used steroid for fairness (53.0%). This craze is fanned by a general impression particularly in the Indian society that "black is ugly" – a notion fanned by the promotion of fairness creams by a host of celebrities. In its totality, the Indian scenario regarding the misuse of topical steroid on face is very dismal and disturbing.[1] Second most common reason of use was melasma (20%) followed by acne (15%), post inflammatory hyperpigmentation (8%) and Tinea faciei (4%). The triple combination formulation for treatment of melasma should be used under doctor's supervision and duration should be as advised by doctor but patients continue to use these formulations as long as they want without any supervision. In cases

of acne, patients started using steroids as it is an easily available OTC product and they started experiencing initial improvement and continued to use for a long period and developed complications and whenever they stopped using steroid for few days there was aggravation for which they continued to use it. Sometimes Tinea is being misdiagnosed and steroid is prescribed.

Similar to our study, a study done by Varshney P, most common indication was fairness(26%) followed by melasma(23%), acne(17%)[2] and by Sonthalia S, fairness (69%), melasma (18%) and acne (13%)[24] and by Dey VK, fairness (50%), melasma and post inflammatory hyperpigmentation (26%), acne (18%)[14] and by Jain S *et al*, fairness(70.6%), acne (12.9%) and post inflammatory hyperpigmentation (8.8%).[12] In contrary to our study Rather S *et al* found 27% patients used steroid for acne, 19% for photodermatoses, 17% for ephelides, 14% for tinea faciei and 12% for melasma.[25]

We found that, most common source was local practitioner including quacks (33%) followed by relatives (26%), friends (19%), pharmacy (15%) and neighbour (7%). The patients were not aware of the fact that local practitioners and quacks are not eligible doctors. In this part there is wide practice of quacks and they rampantly use TCS for faster results without having any idea regarding pathogenesis of particular disease. Similar to our study, a study done by Nagesh TS *et al*, 49.5% topical steroids were prescribed by general practitioners, 31.2% by friends, 11.6% by pharmacists and 6.3% by relatives[26] and by Meena S *et al*, most common source was general practitioners (24.86%).[20] In contrary to our study Nyati A *et al* found most common source was pharmacy (42.53%) then local practitioner (25.85%) and relatives (13.28%).[22]

It was seen that the most common symptoms the patients presented with was itching (76%) followed by erythema (63%), burning sensation (63%), photosensitivity (60%), skin darkening (28%) & scaling (12%). The commonest sign examined was telangiectasia (51%), hypertrichosis (44%), acneiform eruption (39%), atrophy (28%), hypo/hyperpigmentation (27%), rosacea (24%), scaling (14%), perioral dermatitis (13%), folliculitis (7%) and least common was pityriasis versicolor (1%) and crust (1%).

In a study by Sonthalia S, erythema and hypertrichosis were found in 100% patients, acne in 30% and rosacea like eruption in 17% patients.[24] As most of the patients in my study were in darker complexion, appreciation of erythema was difficult in the skin tone. In another study by Sethi S *et al*, 81.1% patients presented with erythema, 80.3% with hyperpigmentation, 68.2% with hypertrichosis, 47.7% with telangiectasia.[7] According to a study by Jha A K *et al*, 42.9% patients had acne as adverse effect, 14.1% hypopigmentation, 8.2% erythema and 7.3% telangiectasia.[27] In a study by Dhalimi M A, acneiform eruption was seen in 36.4%, telangiectasia in 22.1%, hypertrichosis in 19.2%, atrophy in 17.1% and hyper-hypopigmentation in 14.3%.[28] According to a study by Manchanda K *et al*, acneiform eruption was seen as adverse effect in 74% patients, itching in 89%, erythema in 50%, photosensitivity in 39% and hyperpigmentation in 17%.[29] In another study by Bhat YJ *et al*, 74.5% patients presented with erythema, 56.5% with telangiectasia, 51% with hyperpigmentation, 48.5% with photosensitivity, 36.5% with pruritus, 35% with acneiform eruption and 10.5% with perioral

dermatitis.[30]Another study by Chohan SN *et al*, facial erythema was the commonest finding (51.8%), hypertrichosis (26.5%), telangiectasia (18%), acneiform eruption (13.8%).[31]

It was observed that, the commonest dermoscopic finding was hypertrichosis (57%), serpentine vessels (55%) followed by red diffuse areas (51%), branched vessels (45%), brown globules (42%), structureless white areas (28%), follicular plugging (22%), Y-shaped vessels (21%), linear vessels without branches (20%), pustules (17%), comedones (9%), white hair (7%) and the least common was scales (2%) and crusts (1%).

According to a study by Sethi S *et al*, the most common dermoscopic finding was brown globules (96.2%) followed by red diffuse areas (92.4%), vessels (87.1%), hypertrichosis (80.3%), comedones (least common, 10.6%)[7] In another study by Chauhan S *et al*, 85.33% patients had red diffuse areas in dermoscopy which is the commonest finding followed by brown globules(72%) and the least common finding was linear vessels without branches (1.35%).[13] Kushwah S *et al* conducted a study in which the commonest dermoscopic finding was unpatterned brown pigmentation (86.3%), polygonal vessels (73.8%) and the least common was ivory patches (11.3%)[10] In another study by Mamatha P *et al*, red diffuse areas was the commonest dermoscopic finding (75%) followed by hypertrichosis (62.5%), linear vessels without branches (60%) and the least common was white hair (5%).[8]

Table 13: Comparative summary of epidemiological, clinical & dermoscopic features observed in different studies including our study

Parameters	Dey VK et al	Varshney P et al	Kushwah S et al	Mamatha P et al	Our study
Sex	Females (79%)	Female (66%)	Female (90%)	Female (80%)	Females (92%)
Age	10-19 years	21-30 years (36%)	31-40 years (50%)	18-30 years (65%)	11-20 years (45%)
Potency	Mid potent (35%), very high potent (15%)	Mid potent, very high potent	Mid potency, high potency (78%)	Mid potent (47.5%)	Mid potent (45%)
Source	Pharmacists, relatives	Pharmacist (38%)	Pharmacist (47.5%)	Relatives (57.5%0	Local practitioner, relatives
Indication	Melasma	Fairness (26%), melasma (23%)	Acne (63.3%), melasma (47.5%)		Fairness (53%)
Duration	1 year (69%)	_	<6 months (79%)		>1 year (59%)
Adverse effect	Acne (38%), telangiectasia (19%)	Hypo/hyperpigmentation (20%), acne (16%)	Erythema (82.5%), itching (66.3%)		Itching (76%), erythema63%), telangiectasia (51%)

Dermoscopic finding	_	_	Brown pigmentation (86%), polygonal vessels (73.8%), hypertrichosis (54%)		Serpentine vessels (55%), hypertrichosis (57%), red diffuse areas (51%), brown globules (42%)

Conclusions

In our study, most common age group used steroid was 11-30 years. predominantly patients were female and the most common reason to use topical steroid was fairness. Among young girls the craze of fair skin is rampant facilitating the use of TCS. People should be made aware of the side effects of steroids. Education of the general public through media programs and introduction of continuing medical education programs for medical, paramedical personnel and pharmacists are probably the most important steps to be taken to create awareness about the hazards of misuse of topical corticosteroids. Local practitioners, relatives and friends had recommended use of topical steroids to patients mostly, which raises serious concern. In India there should be a regulation of dispensing TCs and should only be given based on doctor's prescription. Strict regulation regarding only prescription-based dispensing of TCs must be put into practice as the mid potent and very high potent steroid usage was rampant amongst the study population.

Dermoscopy in TSDF can be beneficial in a variety of ways, including verifying the diagnosis, distinguishing between other causes of facial redness, and estimating the approximate length of TCS misuse. The other benefit may be counselling patients and monitoring their response to treatment.

There is always a doubt as to which steroid is safe for face; in fact, no steroid is safe for face, and to be prescribed only if specifically indicated for shorter duration and it is very essential to educate patient about side effects and dependency in order to prevent the consequences of abuse. The awareness among doctors and patient is highly essential as magnitude of the problem is high.

Limitations

In spite of every sincere effort my study has certain lacunae.

The notable short comings of this study are:

1. The sample size was small. Only 100 cases are not sufficient for this kind of study.
2. The study was carried out in a rural area so area bias cannot be ruled out.
3. All patients were not able to give proper history of topical steroid usage so recall bias cannot be ruled out.
4. Inability to assess the significance of these findings due to absence of control population.
5. No grading of TSDF was done.


Figure 1&2: Erythema, scaling, perioral dermatitis in TSDF patient

Figure 3: Acneiform eruption in TSDF patient

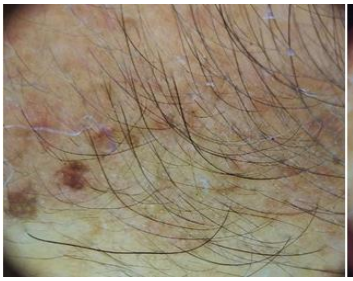
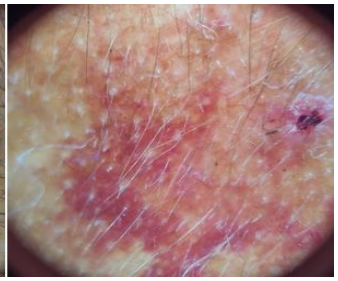

Figure 4 & 5: Dermoscopic findings of brown globules, hypertrichosis, white hair, red diffuse area

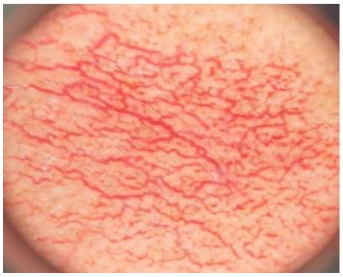


Figure 6 & 7: Dermoscopic findings of branched vessels, polygonal vessels, serpentine vessels and Y-shaped vessels

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