



CLINICO-EPIDEMIOLOGICAL STUDY OF TOPICAL STEROID DAMAGED SKIN AND ITS EFFECTS.

Dermatology

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ABSTRACT

Topical corticosteroids are perhaps the most widely used therapeutic agents in the treatment of dermatological disorders and are indicated in a wide range of conditions including atopic dermatitis, psoriasis, nummular eczema, lichen simplex, seborrheic dermatitis, contact dermatitis, chronic cutaneous lupus erythematosus and lichen planus.

Irrational use of topical corticosteroids over the skin, especially on OTC basis is responsible for a significant proportion of visits to dermatology health facilities. Unwarranted OTC use of TC without a medical prescription is quite common especially among male patients. The study showed that, 399 of the 472 patients who had used TC on their face obtained the drug without a medical prescription as OTC. The types of dermatoses noted in majority 39.19% of the patients was found to be tinea incognito, followed by telangiectasia in 15.04% and acne in 14.6%.

KEYWORDS

INTRODUCTION

The potent anti-inflammatory and anti-proliferative actions of topical steroids not only bring about a marked improvement in inflammatory dermatoses but also cause myriad adverse effects. The adverse effects include tinea incognito, striae, purpura, steroid acne, steroid rosacea, perioral dermatitis, hirsutism, photosensitization, pigmentary changes, steroid addiction, and tachyphylaxis [1]

MATERIAL AND METHODS

This is a cross-sectional study conducted in the department of dermatology, Dr D. Y. Patil medical college and hospital, Pune from September 2017 to September 2019. A total of 472 patients of topical steroid damaged skin were diagnosed. A detailed history pertaining to the use of topical formulation (name and contents were ascertained either on seeing the tubes used or from the prescription), duration and frequency of the application, and information about the source of prescription was noted. Dermoscopy was done using universal serial bus dermatoscope. The data was entered in Microsoft excel and statistical analysis was done using 'Epi Info 7'.

RESULTS

Out of 848 enrolled patients with clinically evident adverse effects of TC misuse, 472 (55.66%) patients were found to be injudiciously using TCs while the rest were using TCs as per prescription for various dermatological indications. Most of the patients were in the age group of 11-20 years (32.62%). Out of these, 33.05% of the study population were females and 66.9 were males. Out of the study population, 44.9% were illiterate.

Most common reason for OTC usage of steroid was fungal infections [Table 1/ graph 1].

Maximum of our patients (97.6%) were not aware about the dosage i.e., how much amount of medicine should be used for application over a specific body area. A total of 185(39.19%) patients inappropriately used the TC in terms of incorrect frequency. Source of advice for initiation of topical steroid application was majorly family and friends followed by pharmacist [Table 2/Graph 2]

Steroids of varying potency were used by the patients, commonest being topical combination of clobetasol propionate, anti-biotics and anti-fungal cream (57%). followed by use of betamethasone valerate cream (17%). [Graph 3].

.Out of the total patients, only one quarter i.e. 23.51% patients had sparse knowledge about the adverse effects of TCs and 76.69% were not aware about the side effects caused due to improper use. The

cutaneous adverse effects due to topical steroid abuse, as seen in our study, are listed in [Table/Fig-4]. Most common side effect seen was tinea incognito in 39.19% followed by telangiectasia and facial acne. Patients who presented with acneiform eruptions had sudden onset of lesions at the sites of application with predominance of papulopustular lesions.

DISCUSSION

This study was conducted with the intention of determining the extent of OTC use of TC, identify factors contributed for the same, the most common types of dermatoses noted among the dermatology outpatient department attendees, and also to assess the extent of availability of TC in Pimpri, Pune

In our study, more males 316 (66.09%) were found to use TC than females.

Most of TCs compound misusers in our study were in the 11-30 years age group which is comparable with a study done by Saraswat et al; 36% were in the age group of 20-30 (Saraswat et al., 2011) [2]. This can be attributed as young people in this duration start taking care for their appearance.

The commonest types of dermatoses noted in majority of OTC user patients in this study was tinea incognito (39.19%) followed by telangiectasia (15.04%), acne in (14.65%)

This study also indicated that, from those 472 patients who had used TC on their skin, 399 (84.53%) obtained without a medical prescription on OTC basis.

The findings of this study indicated that, friends and family (44.49%) of the patients followed by pharmacists and cosmetics shops (40.04%) as the commonest drug sources. This shows that, a weak drug sales regulation and poor dispensing practice by the pharmacy professionals could be attributed to the easy accessibility of these groups of drugs as OTC. Similarly, local pharmacies, friends and relatives were also identified as the source of TC for OTC use by different studies [Sarasawat et al., [2]

In recent years TC have emerged as major skin whiteners due to their effective bleaching power. Also as it has additional anti-inflammatory activity, TCs reduces the risk for dermatitis, hence many people use TC for this indication. With regard to the reasons for use, the current study showed that TC was used as OTC for cosmetics purpose (acne, melasma, or as a daily cream) in 236 (49.7%) of the patients.

The TC used by majority of the patients were classed as potent or super

potent and the drug commonly used - fixed drug combination of Clobetasol propionate 0.05%, anti-fungal and antibiotic cream -- in 364 (55.9%) followed by Betamethasone Valerate in 80 (16.9%) of the patients.

Tinea incognito was the main cause (38.13%) of using TC. This can be due to damp conditions of monsoon season which was the majority timespan of the study, wearing of tight fitting formal clothes in this industrial area of Pune, tight working hours.

TC is used preliminary used due to its anti-inflammatory properties. But, their indiscriminate use can lead to numerous side effects such as superadded infections, acneiform eruptions, atrophy, telangiectasia, striae, purpura, hypo- and hyper-pigmentation, hypertrichosis, rosacea-like perioral and periorbital dermatitis.[1,3, 4, 5, 6, 7] Moreover when TCs are used in un-approved indications, these may change the morphology of the dermatosis, modifying the normal clinical picture thus, masking the clinical diagnosis and making further treatment more difficult. This feature is mainly seen in case of tinea incognito which is the most common adverse effect found in our study accounting for 39.19%.

Occurrence of monomorphic acne over face was also seen as another major effect of misuse of TC(14.16%) Continuous and prolonged use of TCs over face cause dermatoses which has been named variously by different authors and is known by a distinct clinical presentation called as "Topical Steroid-Dependent Face" (TSDf)

Duration of use ranged from with minimum of 4-6 months to maximum of 10 years. Though most of the patients (76.60%), were aware of the potential side effects of the topical application of steroid preparations, the use of this was continued due to initial response obtained of the product. Amongst the unaware patients, males(74.36%) were more ignorant of the side effects than females(77.53%).

Eighteen TCs of different potencies are available in India according Monthly Index of Medical Specialities (MIMS), India and Indian Drug Review. There are almost 119 TCs fixed dose formulations with other agents (anti-bacterial, anti-fungal, etc.,) [8,9 10,] but out of these only 27 are among the CDSCO's approved list of FDCs in India [11]. It is the time that we make stringent rules and regulations against the pharmaceutical companies those who manufacture these non-approved FDCs and also against the pharmacist who dispenses these medical products without a valid written prescription. ITATSA (IADVL Task Force Against Topical Steroid Abuse (ITATSA) is a new step in this direction. It is a special league formed by the Indian Association of Dermatologists, Venereologists and Leprologists (IADVL) for the surveillance of TC abuse across the country.

Table no. 1. – showing reason for using topical corticosteroid .

Reason for using TC	Numbers (n=472)
Dermatophytosis and intertrigo	179 (38.13%)
Acne Vulgaris	109 (23%)
Melasma/hyperpigmentation/ Lightening of Skin Colour	76 (16%)
Moisterising cream/ daily use cream	51 (10.7%)
Eczema, Psoriasis	36(7.6%)
Bacterial /Viral infections	15(3.17%)
Vitiligo	6(1.27%)

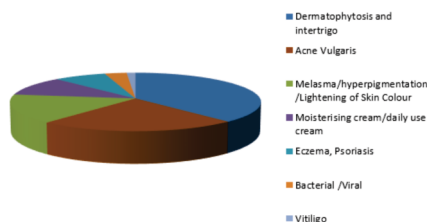
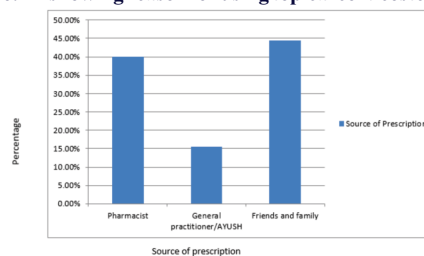


Table no.2 – showing source of prescription with primary source being friends and family followed by pharmacist

Source of prescription	(%)
Pharmacist	40.04%
General practitioner/AYUSH	15.46%
Friends and family	44.49

Graph no. 2 – showing reason for using topical corticosteroid



Graph no. 3 – Pie chart showing percentages of OTC TCs misused

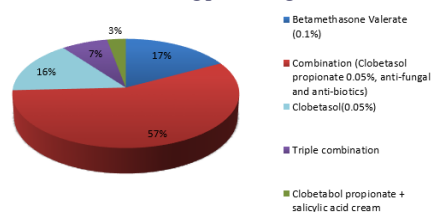


Table no. 4 – showing percentage of adverse effects seen due to topical corticosteroid abuse.

Adverse effects	Number(%)
Tinea incognito	185 (39.19 %)
Steroid atrophy	30 (6.35%)
Telangiectasia	71 (15.04%)
Steroid acne	69 (14.6%)
Perioral dermatitis	4 (0.84%)
Hyperpigmentation/dyschromia	51 (10.8 %)
Steroid rosacea	5 (1.05%)
Hirsutism/hypertrichosis	4 (0.84%)
Striae	31 (6.56%)
Hypopigmentation	15 (3.17%)
Demodociosis	2 (0.42%)

Graph no. 4 – showing percentages of adverse effects due to topical corticosteroids in both genders

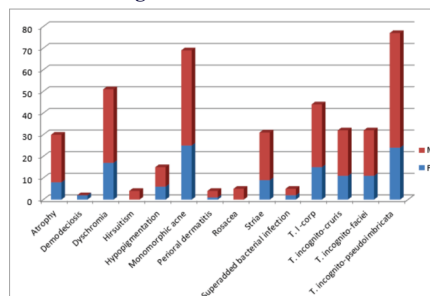
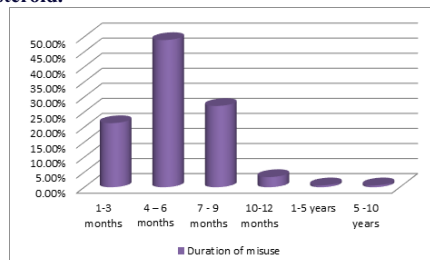


Table no : 5 showing average duration of misuse of topical steroid preparation.

Duration of misuse	(n=472)
1-3 months	91 (21.3 %)
4 – 6 months	231 (48.9 %)
7 - 9 months	128 (27 %)
10-12 months	16 (3.38 %)
1-5 years	3 (0.63 %)
5 -10 years	3 (0.63 %)

Graph no. 10 – showing duration of misuse of topical corticosteroid.



Maximum duration of misuse was found to be 10 years.



Figure no 1 : showing tinea incognito over abdomen



Figure no. 2 showing monomorphic acneform eruption over chest after application of OTC steroid preparation



Figure no. 3 showing monomorphic acneform eruptions over face with hirsutism in moustache area following melamet cream for skin lightening



Figure no. 4 showing papulo-pustular eruptions on face indicating demodexiosis

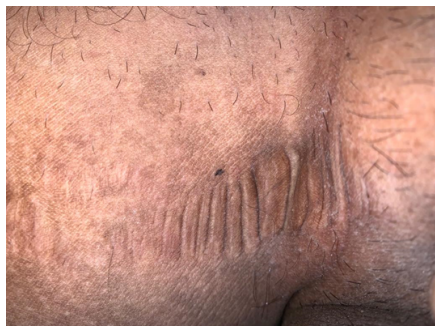


Figure no 5 – showing striae in groin region post application of OTC steroid preparation for tinea cruris



Figure no. 6 Post steroid application hyperpigmentation with surrounding hypopigmentation



Figure no. 7a. Showing diffuse erythema with telangiectasia with patchy hypopigmentation with monomorphic acne over face in a chronic topical steroid abuse patient

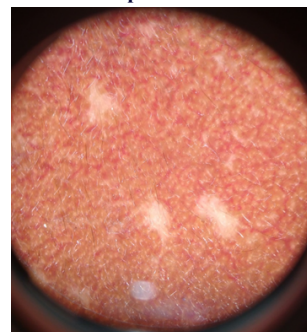


Figure no. 7b showing dermoscopy of facial telangiectasia of the above patient

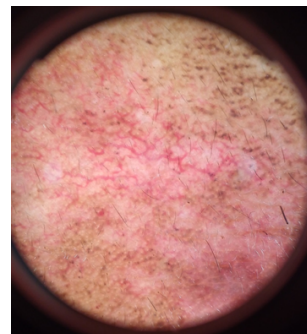


Figure no. 7c showing dermoscopy of facial telangiectasia with patchy hypopigmentation and hyperpigmentation

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