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Research Article

**MISUSE OF TOPICAL CORTICOSTEROIDS AMONG
PATIENTS VISITING OUTPATIENT DEPARTMENT DHQ,
GUJRANWALA****Dr. Farah Humera, Dr. Zumirah Atiq, Dr. Tanzila Younas**
District Headquarter Hospital, Gujranwala**Abstract:**

Background: The use of skin-color lightening products containing topical steroids is a practice amongst men and women of Pakistan. People of different age groups, socioeconomic status and marital status use a variety of these products. In addition to topical steroids, some products also contain mercury and hydroquinone derivatives. The use of such substances is associated with many aggravated skin conditions. **OBJECTIVE:** The aim of this study is to assess the magnitude of use of products containing topical steroids and their derivatives, the adverse effects stemming from their use, the motivation/cause of their use and the demographics of patients who used such products. **METHOD:** A cross sectional study was conducted at dermatology department DHQ Gujranwala during the period of 1 April to 15 May, 2018. Preset questionnaires were filled out for patients who used topical steroid products on their face. **RESULTS:** Out of 7740 patients who visited OPD, DHQ Gujranwala, and 384 patients presented symptoms of facial dermatosis. 52% among them had used products containing topical steroids. 51% were unmarried and in the age group of 20-29 years. 14% were illiterate, 35% had passed matriculation. 47% were housewives. 60% belonged to urban areas. Majority of them (92%) were aware that use of steroids can be harmful. 14% used pure steroids while 86% used hand crafted mixtures. 47% were using steroids prescribed by relatives, 23% on recommendation of friends. 3% were prescribed by physicians and only 0.5% by dermatologist. 56% used them for whitening melasma and acne and 0.5% for treatment of tinea. 33% presented adverse effects of melasma and freckles, 27% presented acne, 8% with burning on face. Symptoms of hypopigmentation and hyperpigmentation are rare (1%). Patients with extended use presented cases of plethora (24%), hypertrichosis (14%) cutaneous atrophy (5%). No side effects were seen in (25%) of the patients. **CONCLUSION:** The application of Topical steroids on the face leads to a multitude of side effects and skin conditions. It is essential to create awareness among the patients as well as the doctors regarding the proper use of these drugs.

Key Words: Out Patients, Topical Steroids, Misuse, Face, Adverse Effects.

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INTRODUCTION:

Topical corticosteroids were first introduced in 1952 in the form of hydrocortisone that made a dramatic contribution to dermatology [1]. They became widely used for dermatologic treatment of a number of inflammatory, infectious and non-infectious conditions, e.g psoriasis and eczema. Depending on their vaso constrictive properties, they were classified into various groups[2,3]. Today they are the most widely prescribed medications in dermatological treatments. The remedial action of steroids is due to their anti-inflammatory, vaso constrictive, anti-proliferative and immunosuppressive properties[4,5]. As potent topical corticosteroids are easily available over-the-counter at a low price, their misuse is widespread in the general population. This has led to many adverse effects as most patients do not use these products on a physician's or a dermatologist's prescription. [6]. Their use has spread alarmingly fast amongst the general population because of their rapid action in causing skin fairness and treatment of acne and other common skin diseases. In spite of their adverse effects being a common problem among their users, to our knowledge, there has not been a significant study that has compiled the extent of the misuse of topical corticosteroid products in Pakistan. To analyze this problem, we have conducted this study that highlights their prescribed use and adverse effects that lead from it. The skin conditions resulting from their abuse has led to a large patient burden on dermatology outpatient departments (OPDs) at government hospital. We hope that the quantitative results of this study highlight the gravity of this problem so that it may be addressed by the relevant government bodies and drug regulatory authorities.

METHODOLOGY

This is an observational cross-sectional study of patients who visited the Dermatology OPD at DHQ Gujranwala, Pakistan. Each questionnaire was filled with informed patient consent. The questionnaire included fields for age, gender, qualification, marital status, employment status, address, type of TCS used, duration of application, number of applications per day, source of prescription, indication, awareness of adverse effects and effects of TCS application.

STUDY PERIOD

There was conducted in the duration from 1 April 2018 to 15 May 2018.

INCLUSION CRITERIA

- Patients who gave consent for inclusion in the study.
- Female patients attending the OPD with facial dermatosis.
- Patients between 10 to 60 years of age.
- Patients with a history of application of topical corticosteroids and handcrafted creams containing corticosteroids on the face for a period of 2 weeks or more.

EXCLUSION CRITERIA

1. Patients using Oral corticosteroids
2. Patients with preexisting morbidity like polycystic ovary syndrome, Cushing syndrome, thyroid disorders or connective tissue diseases.
3. Past history of preexisting atopic dermatitis, seborrheic dermatitis and contact dermatitis prior to the initiation of steroids use.

RESULTS:

Out of a total 7740 female patients who visited the outpatient dermatology department at DHQ Gujranwala, 384 presented with facial dermatosis. More than half of them (**201 patients**) had used corticosteroids. They have been segregated in the following criteria:

1. Marital Status
2. Age Distribution
3. Literacy Level
4. Occupation
5. Residential Location
6. Type of CS Used
7. Source of recommendation of CS
8. Reason for using CS
9. Duration of Use
10. Application of CS per Day
11. Adverse effects observed

The data obtained in the questionnaires has been tabulated with the following observations:

TABLE 1 : MARITAL STATUS		
	No. of patients	Percentage
Unmarried	102	51%
Married	99	49%

Observation:

- The use of CS is seen equally among both married and unmarried women.

TABLE 2 : AGE DISTRIBUTION		
Age distribution (years)	No. of patients	Percentage
10-19	36	18%
20-29	103	51%
30-39	41	20%
40-49	18	9%
50 & above	3	2%

Observation:

- The majority of patients who use CS products are in the age group of 20-39
- A significant number of teenagers are also using CS products.

TABLE 3 : LITERACY RATE		
	No. of patients	Percentage
Illiterate	29	14%
Primary	16	8%
Middle	25	12%
Matric	70	35%
Secondary	32	16%
Graduation	16	8%
Masters	13	7%

Observation:

- Majority of the patients using CS products are literate and have completed high-school education or more.

TABLE 4 : EMPLOYMENT		
Employment	No. of patients	Percentage
Housewife	94	47%
Student	47	23%
Unemployed	39	19%
Salaried Professionals	20	10%
Business women	1	1%

Observation:

- Majority of the patients using CS products are unemployed or nonworking women.

TABLE 5 : REGION		
Address	No. of patients	Percentage
Urban	121	60%
Suburban	51	25%
Rural	29	15%

Observation:

- Majority of the patients using CS products belonged to urban or suburban areas.

Only 5 patients (92.48%) were aware of the fact that undue use of steroids can be harmful. 29 (14.4%) patients used pure steroids while 172 (85.57%) patients used hand-crafted topical application containing a mixture of steroids and fairness creams [Table 6].

TABLE 6 : TYPE OF STEROID USED		
	No. of patients using	Percentage
Steroid in combination	172	86%
Pure Steroid	29	14%

Observation:

- Vast majority of the patients used a combination of CS products.

TABLE 7: SOURCE OF RECOMMENDATION OF STEROIDS

	No. of patients	Percentage
Relatives	95	47%
Friends	47	23%
Social media	26	13%
Beautician	25	12%
Physician	6	3%
Pharmacist	1	1%
Dermatologist	1	1%

Observation:

- Very few of the patients who used CS products did so on a physician's recommendation.
- Vast majority of them have used CS products on recommendation of relatives and friends.

TABLE 8: REASON FOR USE

Cause of using steroid	No. of patients	Percentage
Whitening	113	56%
Melasma	46	23%
Acne	42	21%
Tinea	1	0.49%

Observation:

- Skin whitening and toning is the largest single motivating factor for patients to use CS products.
- Some patients also use CS products to cure Acne.

TABLE 9: DURATION OF STEROID USAGE

Duration	No. of patients	Percentage
1 to 3 months	85	42%
3 to 6 months	21	11%
6 months to 1 year	26	13%
1 year to 3 year	39	19%
3 year to 5 year	23	11%
More than 5 year	7	4%

Observation:

- Majority of the patients using CS products had been doing so for 3 months or less. Thus the adverse effects of using these products can be seen fairly quickly.

TABLE 10: NO. OF STEROID APPLICATION PER DAY

No. of applications per day	No. of patients	Percentage
1	181	90%
2	16	8%
3	3	2%
4	1	-

Observation:

- Majority of the patients used CS products only once daily.

TABLE 11: ADVERSE EFFECTS OF STEROIDS

	No. of patients	Percentage
Hyperpigmentation	66	33%
Steroid Acne	54	27%
Facial Plethora	48	24%
Steroid induced Hypertrichosis	28	14%
Burning	17	8%
Cutaneous Atrophy	10	5%
Dry Facial skin	2	1%
Tinea Incognito	2	1%
Hypopigmentation	2	1%

Observation:

A large number of patients 66 (32.83%) presented with adverse effect of hyperpigmentation (melisma and freckles). 2nd major side effect noted was acne in 54 (26.8%) patients. Burning was noted in 17 (8.45%) of the patients. In contrast to hyper-pigmentation, hypo-pigmentation was quite rare (0.99%). Patients using steroids for long duration were also found to have facial plethora 48 (23.88%), hypertrichosis 28(13.93%) and cutaneous atrophy 10 (4.97%) [Table 11]. However, no side effect was seen in 50 (24.86%) of the patients.

DISCUSSION:

Misuse of topical corticosteroids has become common practice in Pakistan. This can be inferred from the fact that a large number of patients visit the Dermatology departments of hospitals with problems that are caused by CS abuse. The main motivating factor behind the frequent use of CS products is their skin whitening action and their rapid action in symptomatic relief of a number of a skin disease. this causes the busy physicians to prescribe them for satisfaction of patients. This leads to uncontrolled stuffing of corticosteroids from a single prescription thus causing overwhelming adverse effects. The real problem is probably even more immense because at the time of the study many patients may have not presented to the dermatologist. The adverse effects were directly related to the duration and type of topical corticosteroids that is used and have become more prevalent with the use of pure steroids and for longer duration. In our study steroid usage for long duration lead to facial plethora similar to results in another study. This study has also been conducted in many countries revealing corticosteroid misuse a major challenge for the dermatologists. In Pakistan this problem is even more immense because of uninterrupted supply of steroids and majority of the dark-raced population as the most frequent cause of its use was skin whitening. Most of the patients misusing steroids were found in the age group of 20-29 years in which females are particularly concerned about their appearance.

Recently a new term “topical steroid-dependent face” has been used by Saraswat *et al.* [7] for the condition in which patients who have used steroids for a long period of time develop rebound erythema, burning and scaling on withdrawal of the steroids. The typical example of corticosteroid misuse that came up from our study is of a young female who use potent steroid containing creams just for beauty and fairness recommended by relatives or friends without any evident skin disease. Unfortunately, in spite of the fact that these steroids can cause such serious and disfiguring adverse effects, they are widely sold out without any prescription or control. Moreover, a major drawback that seems to magnify the problem is the lack of awareness among the general public regarding its adverse effects.

In this study, patient’s relatives or friends are mainly liable for the misuse of topical corticosteroids. It strongly reflects the shortcomings of the medical education of the general public with respect to this problem. Side effects of topical corticosteroids can be effectively treated. Most frequent side effect that came up in our study was hyper-pigmentation that was dealt with anti-melasma creams and sunscreen agents. Acne was also a major side effect that was also appropriately treated thus improving quality of life of these patients. Most of the subjects were using potent TCs in combination with other fairness creams in our study results were inconcordance with other studies from the world, [8][9] [10] [11] [12] Betamethasone valerate was the most common pure

steroid used by the patients. Betnovate™ being the most common brand name almost solely prescribed by non-physicians.

Our study unveils the fact that this problem of TC misuse is becoming endemic in many countries of the world. Even in England, where only hydrocortisone and clobetasole can be given without physician's prescription are facing the same problem of TCs misuse. We have observed some shortcomings in our study, the sizable problem was the fact that our diagnosis was clinical and was not confirmed by any investigation. Moreover, substantial patients have use steroids in combination with other products thus interfering with its efficacy. Some patients could not exactly recall the time for which they were using steroids. some patients also have taken treatment from other physicians for the adverse effects thus masking them when they presented to us thus leading to under-estimation of the actual magnitude of this problem. in spite of all the limitations our study still relieved widespread and un-guarded use of steroids for facial dermatosis and beauty. This avalanche of TCs misuse should be checked immediately and it requires a multi-disciplinary approach starting from the very basic level of public awareness. Social media i.e television, internet and Facebook can be used as an effective tool in this campaign telling the general public regarding the adverse effects of steroids. Dermatologists and general practitioners should hang out posters regarding TCs adverse effect to create public awareness. Governing authorities should ban over-the-counter sale of TCs. Actions should be taken on all possible fronts to make the efforts fruitful. [14]

CONCLUSION:

Our study revealed that misuse of topical steroids on face is showing explosive upsurge in our society. They do not need any prescription and is easily available and affordable so increase awareness needs to be spread among people through different sources moreover straight policies are required regarding their distribution and prescription to avoid complications.

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