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TOPICAL CORTICOSTEROIDS AND FAIRNESS CREAMS ABUSE ON FACE, CAUSING STEROIDAL DERMATITIS RESEMBLING ROSACEA (SDRR)

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ABSTRACT

The main aim of this study was to estimate the extent of problem with suggestion to social demography, motivation and to record adverse effects of topical corticosteroids (TCs) and fairness creams misuse on the face. This study was conducted from January 15 to April 24, 2015. The undesirable effects in patients using topical corticosteroids (with or without fairness creams) were facial erythema associated with irritation in 40 (26%), aggravation of preexisting dermatitis like acne 30 (20%), steroid addiction in 26 (17%), hypertrichosis in 22 (14%), telangiectasia 10 (6%), acne form eruption 8 (5%), popular rosaceous like rash 6 (4%), hypo pigmentation 5 (3%), tinea incognito 2 (1%) and atrophy in 1 (0.6%) patients. similar findings with some variations were observed in other studies. unnecessary cosmetic use of TCs with or without fairness creams is quite common in facial dermatoses resulting in steroidal dermatitis resembling rosacea. the desire to use these products by people insensible to adverse effects is undesirable and the situation is likely to get worse until remedial measures are taken on huge amount of fronts to regulate the business with appropriate omission and change the public perception and attitude to accept their natural skin tone despite social resistance to such instruction.

INTRODUCTION

Topical corticosteroids (TCs) were first introduced in dermatology deportment in 19521 and are now one of the most commonly used therapeutic formulations in the clinical practice. TCs creams offer quick symptomatic relief in various inflammatory dermatoses, especially in short-term and even its improper use, for instance in infectious dermatoses, produces an initial clinical improvement (Sulzberger and Witten, 1952). In addition to their antiinflammatory property, TCs also have potent antiallergic, atrophogenic, melanopenic, sex- hormone-like and immunosuppressive effects on the skin and can lead to important local adverse effects if used arbitrarily (Hengge *et al*., 2006). Not simply the abuse, even the excessive, regular use of topical fluorinated steroids on the face is associated with eruption that is clinically impossible to differentiate from rosacea and is known by various names by different authors like, perioral dermatitis, (Mihan and Ayres, 1964) light sensitive seborrheid, (Frumess and Lewis, 1957) rosacea-like dermatitis, (Chen and Zirwas, 2009) steroid rosacea, (Leyden *et al*., 1974) steroid dermatitis resembling rosacea, (Ljubojevia *et al*., 2002) and steroid-induced rosacea-like dermatitis (Del Rosso, 2011). The major clinical appearance of this dermatosis is diffuse facial redness with or without papulopustular lesions in addition to the development of rebound phenomenon after withdrawal of TCs (Leyden *et al*., 1974). This dermatosis is regularly seen in the on a daily basis of clinical practice, but there is drought of reports describing it in the medical literature (Leyden *et al*., 1974; Del Rosso, 2011). In addition to steroid rosacea, prolonged use of TCs cause acne form eruption, steroid addiction, hypertrichosis, and red face syndrome associated with severe rebound erythema, burning and scaling on the face on any attempted termination of the application (Rapaport, 1999). A further measurement of TCs misuse is its cosmetic application particularly in combination with bleaching creams to make the skin fair among dark complexioned people. This cosmetic abuse of TCs is worldwide and has been the subject of studies mostly from Africa, (Mahe *et al*., 2003) Asia (Lu *et al*., 2009; Agarwal *et al*., 2011; Rathi, 2006) and even developed countries like the

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USA are facing this problem (Solomon *et al*., 1996). The abuse of TCs is tangled with fairness creams in our colour conscious society where people are fixated with fair colour due to various social and chronological reasons. Like fairness creams, TCs are willingly available over the counter and in most instances, these are used as a depigmenting agent in combination with mercury or hydroquinone based bleaching creams in conditions such as melasma, freckles, acne and numerous a period just to improve the dark complexion. Thus, the combination of factors like easy accessibility, lack of awareness regarding side effects, mania for fair skin and poor access to dermatologists makes the situation in kadapa for their misuse in the community.

MATERIALS AND METHODS

The main aim of this study was to estimate the extent of problem with suggestion to social demography, motivation and to record adverse effects of topical cortico steroids (TCs) and fairness creams misuse on the face. It is an observational, descriptive study involved a total of 150 patients with diagnosed as steroidal dermatitis resembling rosacea (SDRR) the patients who consulted the department of dermatology at rajive gandhi institute of medical science (RIMS), kadapa, andhrapradesh. This study was conducted from January 15 to April 24, 2015.

The study was approved by the ethical committee and in this study we are included the patients who are suffering with the SDRR and who had history of TCs and/or fairness creams use on the face continuously for more than 30 days or occasionally (for more than 90 days) due to any purpose other than SDRR. Patients who had already with natural history of rosacea and pregnancy and those taking systemic cortico steroids were excluded from this study. The diagnosis was established on clinical basis and informconsent was sought from each patient. Patients were interviewed directly by the clinical pharmacist and dermatologist using structured questionnaire, recording relevant clinical data like complexion and clinical details of the disease which prompted the patients to visit the dermatology clinic, demographics, and income. In addition, a full skin examination was performed to detect any circumstance related to abuse of topical steroids. Particular consideration was given to TCs with or without fairness creams therapy regarding the type, potency, duration of therapy, purpose, and the source of its use. Patients were also probed, who had prescribed the medication, patient himself, friend, family members, pharmacist, or general practitioner. We asked if the patients know brands and adverse effects of the creams and if they had read the leaflet before use.

RESULTS

Out of the 150 patients studied, 115 (77%) were females and 35 (23%) males. The age wise distribution of patients were found to be, from 17 to 35 years and 95 (63%) were unmarried and 55 (37%) were married. The urban-rural ratio was 138: 12, and 135 (90%) patients were belonged to lower and 15 were (10%) to middle socioeconomic class. On the topic of skin colour 122 (81%) patients had brown skin while 28 (18%) were fair complexioned. Majority of the patients 95 (63%) were students, followed by 35 (23%) household workers and 20 (13%) were factory employees. On the subject of literacy status 115 (76%) were literate with minimum qualification of secondary school certificate and 35 (23%) were either uneducated. The different formulations of the cortico steroids used by the patients were showed in Table 1 and popular topical carticosteroids and fairness cream brands were showed in Table 2.

Table 1. Type of Topical Formulations Used by Patients (n=150)

Topical formulations	N (%)
Potent steroids plus fairness	100 (66%)
Potent topical steroids: betamethasone valerate and clobetasol propionate	35 (23%)
Fairness creams	15 (10%)

Table 2. Different Brands Used By the Patients (n=150)

Trade name	N (%)
Betnovate® cream	95 (63%)
Dermovate® cream	10 (6%)
Fair & Lovely® cream	20 (13%)
Beclomethasone cream	20(13%)
Face Fresh® cream	5 (3%)

Most of the patients used more than one brand of fairness creams and no one of the patients were unfamiliar with the ingredients or acknowledged awareness about adverse effects of these creams. Various indications for which topical corticosteroids and fairness creams were used are delineated in Table 3.

Table 3. Indications of Topical Steroids/Fairness Creams

Condition	N (%)
Acne	60 (40%)
Dark complexion	45(30%)
Acne with melasma	15 (10%)
Melasma with freckles	10 (6%)
Tinea faciei	12 (8%)
Nonspecific dermatoses	8 (5%)

Table 4. Adverse Cutaneous Reactions

Adverse effects	TCs/TCs with fairness cream	Fairness creams
Facial erythema	40(26%)	30(20%)
Aggravation of existing lesions	30(20%)	21(14%)
Addiction to formulation	26(17%)	20(13%)
Hypertrichosis	22(14%)	18(12%)
Telangiectasia	10(6%)	16(10%)
Acneiform eruption	8(5%)	15(10%)
Papular rosacea- like rash	6(4%)	12(8%)
Hypopigmentation	5(3%)	8(5%)
Tinea incognito	2(1%)	6(4%)
Atrophy	1(0.6%)	4(2%)

We also ascertained the warning or recommendation concerning the misuse of these creams and found that in majority of the patients, these were prescribed by friends and relatives in 85 (56%), physicians or general practitioners in 15 (10%), beauticians in 10 (6%), self in 15 (10%), chemists in 20 (13%), and others 3(1%). resource of supply was pharmacy in 85 (56%), general stores in 35 (23%) and beautician in 30 (20%) cases.

The ADRs profile of TCs with or without fairness creams versus fairness creams only was dissimilar as highlighted in Table 4. Acne with melasma associated with topical steroids/fairness creams are shown in Figure 1.

Figure 1. Acne with Melasma Associated With Topical Steroids/Fairness Creams

DISCUSSION

The unnecessary facial use of TCs for inflammatory dermatoses and its misuse for cosmetic purposes is a common problem, often associated with eruption resembling rosacea. The rapid symptomatic relief in many dermatoses prompt the patients to misuse the prescription resulting in the collection of the adverse effects, dependence to TCs and this tight spot is confromed by dermatologists not only in Andhra pradesh but also reported from many countries across the world (Agarwal *et al*., 2011; Mahe *et al*., 2003; Al-Dhalimi and Aljawahiri, 2006; Semiz *et al*., 2008).

The undesirable effects in patients using topical corticostroids with or without fairness creams experiential in our study as showed in Table 4, were facial erythema associated with irritation in 40 (26%), aggravation of preexisting dermatosis like acne 30 (20%), steroid addiction in 26 (17%), hypertrichosis in 22 (14%), telangiectasia 10 (6%), acneiform eruption 8 (5%), papular rosacea like rash 6 (4%), hypopigmentation 5 (3%), tinea incognito 2 (1%) and atrophy in 1 (0.6%) patients. Similar findings with some variations were observed in other studies (Bhat *et al*., 2011; Hameed, 2013; Abir *et al*., 2011).

Most of the patients in our study 100 (66%) patients used potent to very potent TCs, which is in concordance with aforementioned studies from other countries (Mahe *et al*., 2003; Al-Dhalimi and Aljawahiri, 2006; Semiz *et al*., 2008; Abir *et al*., 2011). The most preferred brands in our study was betamethasone valerate 95 (63%) followed by beclomethasone and dermovate cream.In our study the summary of a classic abuser is a young female from lower socioeconomic status and urban backdrop, completely unaware to the adverse effects of topical formulations irrespective of the educational status and who uses potent TCs with or without fairness creams usually recommended by a friend or relative for the quest of fairness. This approach is widespread across the board with minor variations in other countries dwelled by dark-complexioned inhabitants where cosmetic use of TCs as a depigmenting agent has become reasonably common as published in series of population based studies. In a representative sample of adults visiting dermatology center in Nigeria, 57.7% were using TCs for cosmetic purposes associated with many adverse effects (Nnoruka and Okoye, 2006; Olumide, 1986). These statistics may be comparable to other prevalence studies carried out in Senegal and Togo, where TCs used as bleaching agents in 37.7% and 18.2% people, respectively (Wone *et al*., 2000; Pitche *et al*., 1997). Taking into consideration this craziness, there is desire for the developing a safe, non-toxic, non-irritating skin whitening agent for both beauty and therapeutic purposes that is devoid of adverse effects (Ebanks *et al*., 2009).

In our study 85 patients used fairness creams in combination with TCs and 25 patients used only the fairness creams and adverse effects were almost similar to steroidal dermatitis resembling rosacea (SDRS) in both the groups with minor differences as highlighted in the Table 4. Increased occurrence of erythema in patients using only fairness creams might be irritant contact due to combined effect of mercury and hydroquinone present in fairness creams. in the same way addictive potential and comparable adverse reactions of fairness creams in our study may be attributed to the contagion of fairness creams with steroids, in addition to mercury, and this is in concurrence to other aforementioned analytical study in India (Agarwal, 2011). This study accomplished that more than 60% of all marketed skin cosmetics in India that promise to produce instant fairness, glow and brightening of skin contain one or another steroid which can lead to serious cutaneous side effects (Agarwal, 2011).

In the same way a Saudi Arabian study on skin-lightening creams, documented the toxic presence of mercury, hydroquinone and steroids in analyzed samples (Al-Saleh *et al*., 2012; Shankar *et al*., 2007). an additional study from Saudi Arabia highlighted the potential of systemic toxicity of popular Fair and Lovely cream and found the traces of mercury in ovarian tissue of mice despite the level of mercury was less than 1 ppm in the tested samples and authors warned that women who regularly use such products are at particular risk, despite having no early symptoms of mercury toxicity (Al-Saleh *et al*., 2009). in the same way a Mexican study concluded that mercury poisoning has been related with the use of mercury containing beauty cream (Weldon *et al*., 2000). Even in USA, mercury containing skin- lightening creams were a source of exposure for increased urinary secretion of mercury among dark complexioned adult New Yorkers and recommended these formulations unsafe and criminal (McKelvey *et al*., 2011). In our study as depicted in Table 3 major indications for using most of these creams were acne, dark complexion and melasma, comparable to that of a pakisthan and other aforementioned studies (Mahe *et al*., 2003; Al-Dhalimi and Aljawahiri , 2006; Abir *et al*., 2011). We also ascertained the advice regarding the prescription of these creams and found that in majority of the patients, these

were recommended by friends and relatives in 85 (56%), general practitioners in 15 (10%), beauticians in 10 (6%), self in 15 (10%), chemists in 20 (13%), and others 3 (1%). In our study, effortless source of supply of these products were pharmacies in 85 (56%), general stores in 35 (23%) and beauty parlors in 30 (20%) of the cases, reflecting the lax regulatory oversight, social factors and influence of aggressive marketing and advertising strategies of manufactures to dupe the people.

Conclusion

Unnecessary cosmetic use of TCs with or without fairness creams is quite common in facial dermatoses resulting in steroidal dermatitis resembling rosacea. The desire to use these products by people insensible to adverse effects is undesirable and the situation is likely to get worse until remedial measures are taken on huge amount of fronts to regulate the business with appropriate omission and change the public perception and attitude to accept their natural skin tone despite social resistance to such instruction. It is also current that primary health care providers be sensitized regarding the adverse effects of TCs / fairness creams abuse on the face and allow them to recommend suitable and safe alternatives.

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Conflict of Interests

The authors have declared that they have no conflict of interest.

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