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RESEARCH ARTICLE

A Questionnaire Study on Patient Knowledge, Attitude, and Perception of Topical Corticosteroid Abuse in a Dermatology Outpatient Department

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Abstract

Numerous studies indicate that patients often misuse topical corticosteroids due to insufficient information and self-administration. In India, these medications are often available over the counter without proper prescriptions, leading to irrational use. This study aims to assess the knowledge, attitude, and practice (KAP) regarding topical corticosteroids among dermatology outpatients. A prospective pre-post study was conducted among 100 dermatology outpatients using validated KAP questionnaires administered through face-to-face interviews. Following patient counselling with an information leaflet, the same questionnaires were completed again after one month. Results showed 53% of participants were women, 71% were aged 22 to 40, and 56% were graduates. Additionally, 49% had fair economic status, 80% were married, and 65% resided in rural areas. The most common adverse drug reaction was acne (31%), with 61% rated as "possible" on the Naranjo scale. Clobetasol propionate 0.05% was misused by 29% of participants, primarily for skin lightening (31%). Pharmacists were the primary information source (51%). Pre-test scores for knowledge, attitude, and perception were low (mean 1.46±1.61, 4.00±3.18, 1.46±1.61), but significantly improved post-test (mean 3.10±2.03, 6.00±2.96, 3.14±2.03) with p-values <0.05 Patient counselling significantly increased knowledge about topical corticosteroids.

Keywords: Topical corticosteroids, Dermatology outpatients , Knowledge, Attitude, Practice.

Introduction

Topical corticosteroids (TCs) are frequently prescribed for dermatological conditions. Betamethasone and clobetasol, for instance, are approximately 10 and 50 times more potent than hydrocortisone, respectively(Chaudhary *et al.,*2019). TCs are categorized based on their potency levels—mild, moderate, potent, and highly potent—which are influenced by the lipophilicity of the compound. These TCs, available in various formulations, are readily accessible over-the-counter (OTC) (Halewijn *et al.,*2019*).* Topical corticosteroids (TCs) are employed in the treatment of various conditions such as dermatophytosis, acne vulgaris, tinea corporis, tinea cruris, melasma, pyoderma, psoriasis, and for skin bleaching. However, improper or extended use of these agents can result in significant adverse drug reactions (ADRs), including epidermal and dermal atrophy, acne, folliculitis, miliaria, rosacea, hypertrichosis, hypopigmentation, allergic contact dermatitis, and the masking or exacerbation of dermatophytosis and scabies (Coondoo A.,2014) .The severity of these ADRs is correlated with the treatment duration and the potency of the TCS.

Numerous studies have indicated that patients often misuse topical corticosteroids due to insufficient information and self-administration. In India, topical corticosteroids are easily available as over the counter medications sometimes even in the absence of proper prescriptions. Studies have shown that patients lack education regarding topical corticosteroids, which in turn leads to its irrational use(Coondoo A.,2014) In the recent years, it has been noticed that there is an increase in Topical corticosteroid misuse in the community (Mehta AB.,2016). Topical corticosteroids

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abuse is quite common with varied presentations most commonly on face. There is need to take urgent remedial steps and increase awareness about this problem in patients using Topical Corticosteroids (Bains P.,2016). Keeping this in view This study aims to evaluate the knowledge, attitude, and perception (KAP) related to the use of topical corticosteroids among dermatology outpatients.

Materials and methods

Study design and settings

A prospective interventional study was conducted among dermatology outpatients in Belagavi city . The study was conducted for the duration of six months. Dermatology outpatients were enrolled in this study in prior to Institutional Ethical Committee (IEC) with Ethical clearance number (Ref no: KAHER/EC/21-22/023) and written informed consent form was obtained from each participant before the enrolment. The study was conducted using self-framed and validated KAP questionnaire among Patients. Patients in our study either identified the topical corticosteroids by name, or the investigator verified their use by examining the prescription or the used tube. Additionally, confirmation was made by presenting a photographic folder containing various commonly available topical steroids or steroid combination creams in our area.

As there was no validated questionnaire available, we used a set of 10 questions in each section of KAP . For subject information leaflet we took the permission for using standardized subject information leaflet provided by British Association of Dermatology on awareness of topical corticosteroids.

Questionnaire design

A questionnaire was designed to understand the knowledge, attitude, and perception of topical corticosteroids in dermatology outpatients. A pilot study was conducted prior to conduct of the main study where the questionnaire was validated and reliability was found to be good (Cronbach's alpha i.e., $\alpha \geq 0.9$). The questionnaires was divided into four sections each section contain 10 questions which includes demographic details, knowledge, attitude and perception. The questionnaire was framed with the questions of yes or no type and using five-point Likert scale. Section one is the patients demographics, which consists of the gender, duration of the TCs abuse, literacy , economic status , marital status and residence of the patients. Sections two, three, and four contain the KAP questions respectively. Questions are close-ended type. Sections two contains 10 basic questions to assess the knowledge of patients regarding topical corticosteroids. Section three contains 10 questions and three-point Likert response scale ranging from agree to disagree was used. Section four containing 10 questions close-ended questions regarding the perception of the patients.

Statistical analysis

The data was entered and tabulated using Microsoft Excel (Microsoft Corporation, CA, USA). The data results were analysed for descriptive statistics by t test, p values and with 95% confidence interval using SPSS (Statistical Package for Social Sciences) software version 22.0. The schematic representation of the study has been depicted in the Figure 1.

Results

The demographic profile of the respondents is as follows: Among the 100 participants, 25% are aged 18-21 years, 71% are aged 22-40 years, and 4% are aged 41-50 years. The gender distribution is 47% male and 53% female. In terms of educational status, 11% have a primary education, 30% have a secondary education, 56% are graduates, and 3% have postgraduate degrees. Regarding economic status, 16% are poor, 49% are fair, and 35% are good. Marital status shows that 20% are single and 80% are married. Lastly, 65% of the respondents reside in rural areas, while 35% live in urban areas. As shown in Table 1.

Tinea Incognito accounts for 8%, acne for 31%, irritant contact dermatitis for 10%, TSDF for 19%, striae for 9%, hypopigmentation for 9%, perioral dermatitis for 11%, and rosacea for 3% is shown in Figure 2.

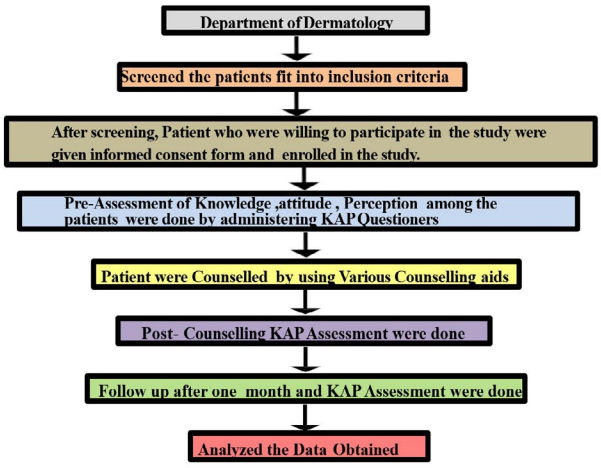

Figure 1: Study procedure

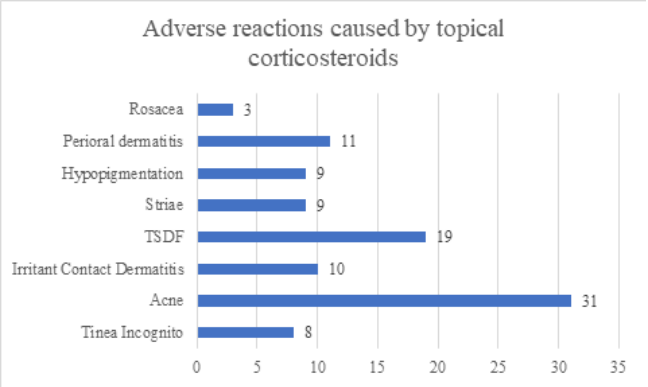

Figure 2 : Adverse reactions caused by topical corticosteroids

Table 1: Demographic profile of respondents

Demographic profile	*No of respondents*	*% of respondents*
Age groups		
Age	*Frequency*	*Percent*
18- 21yrs	25	25.0
22-40yrs	71	71.0
41-50yrs	4	4.0
Gender		
Male	47	47.0
Female	53	53.0
Educational status		
Primary	11	11.0
Secondary	30	30.0
Graduate	56	56.0
Post-graduation	3	3.0
Economic status		
Poor	16	16.0
Fair	49	49.0
Good	35	35.0
Poor	16	16.0
Marital status		
Single	20	20.0
Married	80	80.0
Residence		
Rural	65	65.0
Urban	35	35.0
Total	100	100.00

The Naranjo scale assessment results among the respondents show that 3% of cases were classified as definite,36% as probable, and 61% as possible, based on a total of 100 respondents as shown in Figure 3.

The data on the misuse of topical corticosteroids (TCS) among the respondents indicates that 29% misused Clobetasol propionate 0.05%, 16% used Beclomethasone dipropionate 0.025%, 27% used Betamethasone valerate 0.1%, 18% used multiple TCS, 7% used Mometasone furoate 0.1%, and 3% used Hydrocortisone acetate 1% is shown in Figure 4.

The indications for the misuse of topical corticosteroids among respondents are 20% for fungal infections, 10% for acne, 31% for skin lightening, 3% for eczema, 11% for dermatitis, 14% for dermatophytosis, 9% for melasma, and 2% for psoriasis as shown in Figure 5.

The sources of information for the misuse of topical corticosteroids are 10% from general practitioners, 17% from non-allopathic doctors, 51% from pharmacists, 6% from friends, 4% from relatives, and 12% from social media as shown in Figure 6.

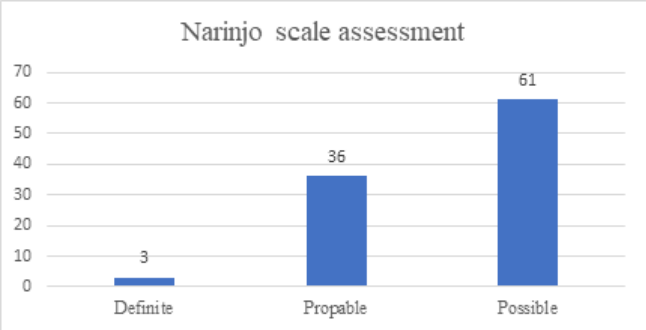

Figure 3: Naranjo scale assessment of adverse reactions

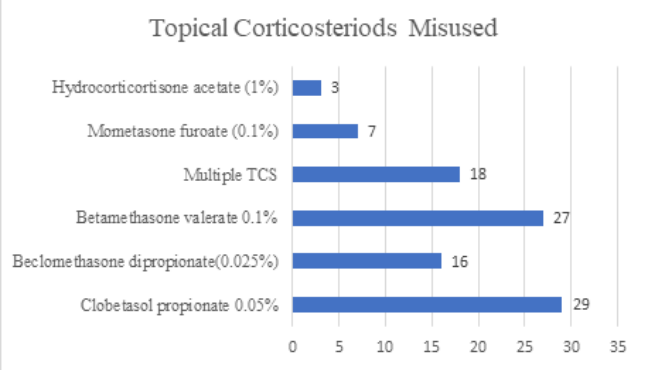

Figure 4: List of topical corticosteroids misused

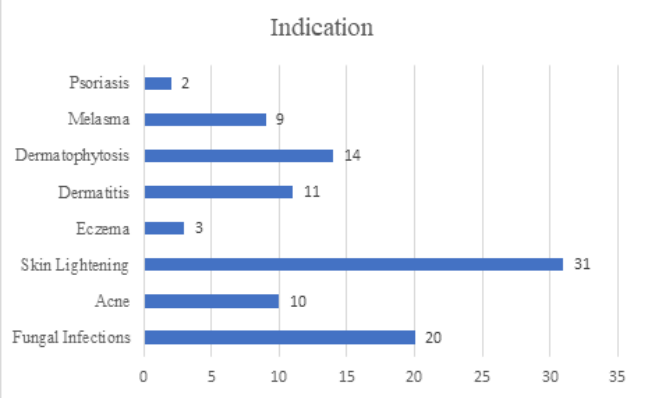

Figure 5: Indications for which topical corticosteroids were misused

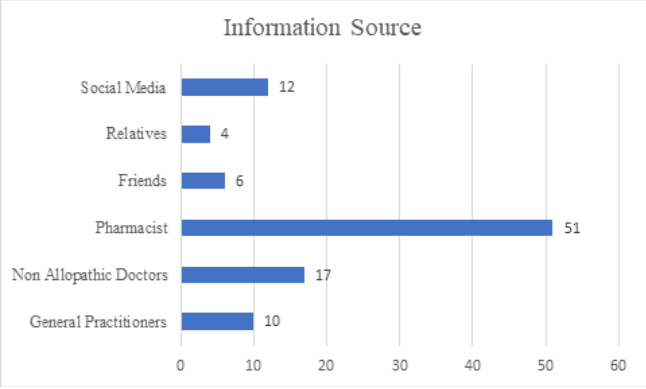

Figure 6: Information sources

Table 2 : Comparison of Pre-test and Post-test KAP Scores by dependent t test

Parameters	*Time points*	*Mean*	*SD*	*Mean Diff.*	*SD Diff.*	*t-value*	*P-value*
Knowledge	Pre-test	1.46	1.611				
	Post-test	3.10	2.035	-1.680	2.029	-8.278	<0.001, HS
Attitude	Pre-test	4.00	3.188				
	Post-test	6.00	2.967	-2.320	3.091	-7.506	<0.001, HS
Perception	Pre-test	1.46	1.611				
	Post-test	3.14	2.035	-1.680	2.029	-8.278	<0.001, HS

*$p < 0.05$

The study shows significant improvements in knowledge, attitude, and perception scores after the intervention. The mean knowledge score increased from 1.46 (SD = 1.611) pre-test to 3.10 (SD = 2.035) post-test, with a mean difference of -1.680 (SD = 2.029), and a t-value of -8.278 ($p < 0.001$, highly significant). The mean attitude score rose from 4.00 (SD = 3.188) pre-test to 6.00 (SD = 2.967) post-test, with a mean difference of -2.320 (SD = 3.091), and a t-value of -7.506 ($p < 0.001$, highly significant). The mean perception score also improved from 1.46 (SD = 1.611) pre-test to 3.14 (SD = 2.035) post-test, with a mean difference of -1.680 (SD = 2.029), and a t-value of -8.278 ($p < 0.001$, highly significant) as shown in Table 2.

Discussion

Totally 100 patients with ADRs by the abuse of topical corticosteroids were enrolled for the study. All of them abused topical corticosteroids more than a month. It was found that topical corticosteroids were abused in all ages and mostly in the age group in between 22-40yrs and all most equally in both genders but slightly more in males. Nearly 56% of the people were graduates (most of them were students). Most of them are having fair economic status (49%). Most of them are married (80%). Most of the people were from rural area (65%) (Meena., *et al* 2017). Most of the studies were cross sectional studies and follow-up studies were almost nil (Chanu., *et al* 2024)

The patients with ADRs may higher when compared with similar studies and it may possible because we only included the patients with ADRs by the abuse of topical corticosteroids. Gender, duration of the TCs abuse, literacy, economic status , marital status and residence of the patients were nearly similar to other studies (Sarathi., *et al* 2020*).*

Nearly 31% of the people used TCs for skin lightening, (20%) for fungal infections like tinea corporis and tinea cruris and 14% of the people used topical corticosteroids for dermatophytosis, 11% for dermatitis , 10% acne vulgaris. Others (9%) topical corticosteroids used for melasma , 3% for eczema and 2% for psoriasis. Similar studies conclude that most of the patients (±50%) were used TCs for skin lightening, acne and dermatophytosis Very high potent TCs such as Clobetasol propionate 0.05% and beclomethasone were abused by 29% and 27% of the patient. It was nearly similar in some studies and some studies concluded that clobetasol was commonly abused by a greater number (≥50%) of patients. (Verma ., *et al* 2017*)*

ADRs were found from the patients with the abuse of topical corticosteroids were Tinea Incognito in 8 individuals (8.0%), Acne in 31 individuals (31.0%), Irritant Contact Dermatitis was observed in 10 individuals (10.0%), TSDF (Topical Steroid Damaged Face) was noted in 19 individuals (19.0%), Striae in 9 individuals (9.0%), Hypopigmentation in 9 individuals (9.0%), Perioral Dermatitis in 11 individuals (11.0%), and Rosacea in 3 individuals (3.0%). This data outlines the various adverse reactions observed, with acne being the most common and rosacea the least common among the reported conditions. Acne form eruptions, tinea and telangiectasia was the most common ADRs in some others studies(±40%).

The Narinjo scale assessment results indicate that among the participants, 3 individuals (3.0%) were classified as having a definite outcome, 36 individuals (36.0%) had a probable outcome, and 61 individuals (61.0%) had a possible outcome. This distribution illustrates the varying degrees of certainty regarding the assessed outcomes, with the majority falling under the possible category similar to other studies like (Rathi., *et al* 2011)

The distribution of information sources among respondents indicates that 10 individuals (10.0%) obtained information from general Practitioners, 17 individuals (17.0%) from non-Allopathic Doctors, 51 individuals (51.0%) from pharmacists, 6 individuals (6.0%) from friends, 4 individuals (4.0%) from relatives, and 12 individuals (12.0%) from social media. This data reveals the varied sources from which individuals acquired information about topical corticosteroids, with pharmacists being the most frequently accessed source similar to Sarathi R et al., where Nearly 88% of the people bought TCs from pharmacies without prescription(Sarathi., *et al* 2020*).*

In a study conducted by Mahdi Al Dhafiri et al., among the majority of patients concluded that they were not knowledgeable with topical corticosteroid formulation, its use, and adverse effects. similarly in our study the patients were having pre-test knowledge low awareness in parameters such as application, usage, side effects

about the topical corticosteroids but in the post test and follow-up the knowledge about topical corticosteroids had been improved. In our study the knowledge of the patients was improved after educating, lack of adequate patient counselling in patients may be to responsible for knowledge gaps regarding topical corticosteroids (Al Dhafiri., *et al* 2022*)*

Basak et al., and Meena et al., have shown that lesser awareness regarding side effects of topical corticosteroids similarly in our study the attitude and perception of the patients were low in pre test scores and significantly improved in posttest, follow-up scores after counselling patients using Patient information leaflet (Meena., *et al* 2017).

Conclusion

From this study we conclude that pre-test results revealed a significant knowledge, attitude, and practice gap among the dermatology outpatient's significant improvement in knowledge, attitude, and perception absorbed in post-test scores after patient counselling using patient information leaflet. Hence Our study reveals the widespread misuse of topical corticosteroids, used indiscriminately across all education levels and locations due to their rapid relief for skin conditions. Many users are unaware of the long-term side effects and have self-medicated for years, exacerbated by affordability and over-the-counter access. There is an urgent need for stricter enforcement of laws banning their non-prescription sale and public awareness campaigns to highlight the associated risks.

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