

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

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Knowledge, attitude and practice regarding topical steroids in dermatology outpatients: A cross-sectional study from a tertiary care hospital in Raipur, Chhattisgarh

Sir,

Various studies have shown that topical corticosteroids are frequently misused by patients due to lack of information and self-abuse. This study has been conducted to assess the knowledge, attitude and practice regarding topical corticosteroids in dermatology outpatients.

A prospective, cross-sectional study was conducted to assess the knowledge, attitude and practice involving steroid usage in 350 adult patients presenting to the dermatology outpatient department at All India Institute of Medical Sciences, Raipur, Chhattisgarh from December 2018 to May 2019. The patients included in our study either named the topical corticosteroids directly or the investigator confirmed by seeing the

prescription/used tube or by showing a photographic folder containing various topical steroids or steroid combination creams which were commonly available in our area.

A questionnaire concerning demographics, knowledge, attitude and practice of topical steroids was developed by the authors of this study. Student's *t*-test and Chi-Square test were used for statistical evaluation. The significance level was taken as *P* value < 0.05.

The ratio of male and female patients was 1.3:1. The age of the patients ranged from 18 to 78 years (mean: 41.5 years). The demographic details of the patients are mentioned in Table 1. The most common indication of topical corticosteroids in our

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Table 1: Demographic characteristics of patients

Variable	Frequency (%)
Age (years)	
<25	141 (40.3)
25-45	167 (47.7)
>45	42 (12.0)
Sex	
Male	197 (56.3)
Female	153 (43.7)
Marital status	
Married	187 (53.4)
Unmarried	163 (46.6)
Educational level	
Illiterate	15 (4.3)
Primary school	39 (11.1)
Secondary school	135 (38.6)
Graduate	161 (46.0)
Address	
Rural	95 (27.1)
Suburban	50 (14.3)
Urban	205 (58.6)
Occupation	
Students	109 (31.1)
Office workers	89 (25.4)
Homemakers	82 (23.4)
Laborers	29 (8.3)
Business	16 (4.6)

patients were dermatophytoses (66.6%, $n = 233$), followed by acne vulgaris (12.6%, $n = 44$), melasma (8.3%, $n = 29$) and psoriasis (2.6%, $n = 9$).

Most common source of information about topical corticosteroids among patients were physicians (38.9%, $n = 136$), followed by pharmacists (30.3%, $n = 106$), friends (11.1%, $n = 39$), self (8.3%, $n = 29$), old prescription of family (6.3%, $n = 22$) and dermatologists (5.1%, $n = 18$) [Figure 1]. Pharmacist advised practice of topical corticosteroids was seen more frequently in males (33.5%, $n = 66/197$) as compared to females (26.1%, $n = 40/153$). On age wise comparison, use of topical corticosteroids by old prescription of friends and family was more common in age group less than 45 years, as compared to the older age group ($P = 0.047$). The most common diagnosis for misuse of topical corticosteroids among patients were dermatophytoses and acne vulgaris (79.1%, $n = 277/350$), among which 39.7% ($n = 110/277$) were informed by physicians, followed by pharmacists (31.0%, $n = 86/277$), friends (10.5%, $n = 29/277$), self (9.7%, $n = 27/277$), old prescription of family (5.8%, $n = 16/277$) and dermatologists (3.2%, $n = 9/277$). The source of information about topical steroids among different categories of demographic profile and steroid practices in patients have been mentioned in Table 2. The use of topical corticosteroids in dermatophytoses and acne vs.

other dermatological indications was significantly variable in patients depending upon the source of information ($P=0.014$). Ninety four percent of the patients were using topical corticosteroids in combination with antimicrobials. It was observed that among patients who developed side effects due to topical corticosteroids (25.7%, $n = 90$), 78 (86.6%) patients were using it twice or thrice daily. The most common side effects encountered by the patients was aggravation of fungal infection in 23 (25.5%), followed by acne in 21 (23.3%), hypopigmentation and thinning of skin in 10 (11.1%) patients. Out of the patients who developed side effects, 55 (61.1%) stopped using topical corticosteroids on their own and did not consult any health care personnel, 17 (18.9%) continued using topical corticosteroids even after getting side effects and 12 (13.3%) stopped using topical corticosteroids and consulted some health care personnel for the adverse effects.

Most common indication for topical corticosteroids as per our patients knowledge was fungal infection as reported by 188 (44.7%) patients, followed by itching by 104 (24.7%), pigmentation by 49 (11.6%), acne by 44 (10.5%), skin allergy and eczema by 17 (4.1%) and as a fairness cream (as cosmetic) by 12 (2.9%) patients [Figure 2]. Only 58 (16.6%) patients were aware that topical corticosteroids can cause harmful effects. Of these, the most common side effects known were increase in skin infections by 14 (18.7%) patients, followed by red, itchy, burning skin by 13 (17.3%), acne by 12 (16%), redness by nine (12%), photosensitivity by eight (10.7%), hypopigmentation and thinning of skin by seven (9.3%), and dryness by four (5.3%) patients [Figure 3]. It was observed that the knowledge regarding the side effects of topical corticosteroids was maximum in age groups <25 years (22%, $n = 31$), followed by 25 to 45 years (14.4%, $n = 24$), and more than 45 years (7.1%, $n = 3$). Most of the patients (98%, $n = 343$) were unaware that topical corticosteroids have different formulations like cream, ointment or lotion.

One hundred eighty (52%) patients denied any need for a doctor's prescription for use of steroid creams. Three hundred twenty four (92.6%) patients did not know whether the side effects of topical corticosteroids are reversible.

Mahdy *et al.* in their study based in the United Arab Emirates showed poor knowledge, attitude and practice results among patients using different corticosteroids dosage forms.¹ Only 16.6% patients in our study were aware of the harmful effects of topical corticosteroids, which was similar to that reported by Mahdy *et al.*¹ (11.2%) and Basak *et al.* (16.7%).² Mahar *et al.*³ and Meena *et al.*⁴ have shown even lesser awareness regarding side effects of topical corticosteroids (3.2% and 1.63%, respectively); however, these studies included only those patients who presented with side effects of topical corticosteroids.

In our study, majority of the patients (68%, $n = 238$) thought that they were not suffering from the side effects of topical corticosteroids, which was similar to that reported by Mahdy *et al.*¹ (61%). Mahdy *et al.*¹ have also reported 69% of their patients using topical steroids without a doctor's prescription. In a study done by Nagesh *et al.* about awareness and abuse of topical corticosteroids, have found 50% of the patients were prescribed topical steroids by general practitioners (doctors from alternative medicine also included), followed by friends (31.2%), pharmacists (11.6%) and family (6.3%).⁵ Among studies which included patients presenting with side effects of topical corticosteroids, Mahar *et al.*³ have reported old prescriptions of friends and family to be the most common source for steroid usage (33%), followed by pharmacists (20%), homeopathic and ayurvedic practitioners (19%), self (16%), physicians (6%) and dermatologists (5%). Meena *et al.*⁴ has reported the use of

topical steroids without prescription in 65.4% and similar observation regarding the source of information have been described by Dey *et al.*⁶ and Rathod *et al.*⁷

A huge percentage of our patients (94%) were using steroid combination creams. Meena *et al.* have reported the use of steroid combination creams in around 66% patients.⁴

Basak *et al.* have reported side effects in 12% of the patients.² The most common side effect in our patients was an aggravation of underlying fungal infection (25.5%), followed by acneiform eruption (23.3%) similar to Mahar *et al.*³ and Meena *et al.*⁴ who have reported tinea incognito to be the most common side effect, followed by acne.

The limitation of this study is that we could not find out the proportion of alternative medicine practitioners and

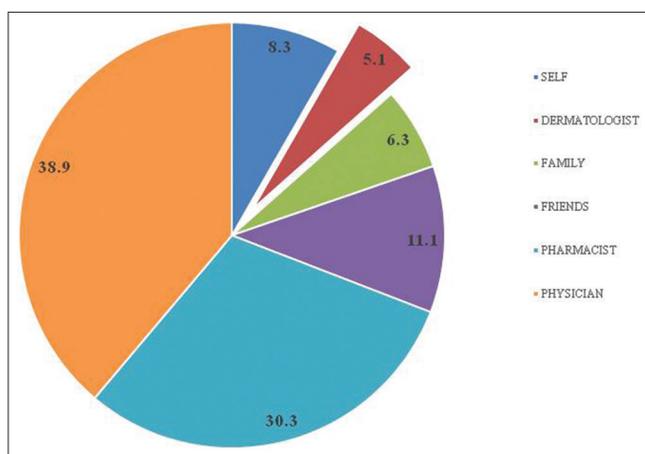


Figure 1: Frequency percentage of source of information about topical steroids usage in patients

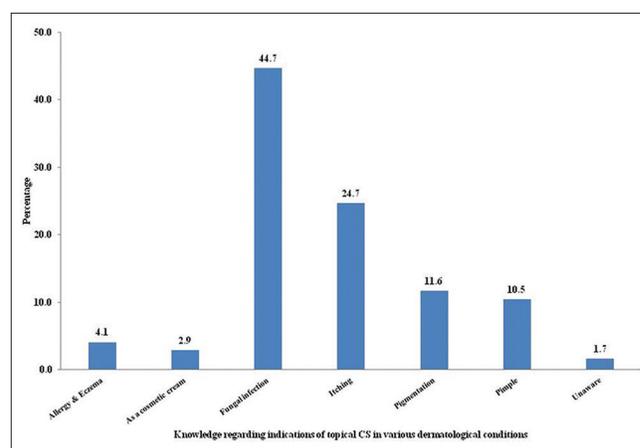


Figure 2: Frequency percentage of patient knowledge about indications of topical steroids

Table 2: Source of information in different subgroups of patients

Variable	Source of information (%)						Total (n=350)
	Self	Pharmacist	Physician	Dermatologist	Family	Friend	
Age (years)							
<25	10 (7.1)	41 (29.1)	56 (39.7)	5 (3.5)	12 (8.5)	17 (12.1)	141
25-45	15 (9.0)	50 (29.9)	67 (40.1)	6 (3.6)	10 (6.0)	19 (11.4)	167
>45	4 (9.5)	15 (35.7)	13 (31.0)	7 (16.7)	0 (0.0)	3 (7.1)	42
Sex							
Male	14 (7.1)	66 (33.5)	78 (39.6)	10 (5.1)	6 (3.0)	23 (11.7)	197
Female	15 (9.8)	40 (26.1)	58 (37.9)	8 (5.2)	16 (10.5)	16 (10.5)	153
Educational level							
Illiterate	2 (13.3)	4 (26.7)	6 (40.0)	1 (6.7)	0 (0.0)	2 (13.3)	15
Primary school	1 (2.6)	13 (33.3)	17 (43.6)	1 (2.6)	1 (2.6)	6 (15.4)	39
Secondary school	11 (8.1)	44 (32.6)	49 (36.3)	7 (5.2)	11 (8.1)	13 (9.6)	135
Graduate	15 (9.3)	45 (28.0)	64 (39.8)	9 (5.6)	10 (6.2)	18 (11.2)	161
Steroids used for dermatophytoses and acne	27 (9.7)	86 (31.0)	110 (39.7)	9 (3.2)	16 (5.8)	29 (10.5)	277
Steroids used as combination with antifungal, or antifungal-antibiotic	27 (8.2)	103 (31.3)	127 (38.6)	15 (4.6)	21 (6.4)	36 (10.9)	329

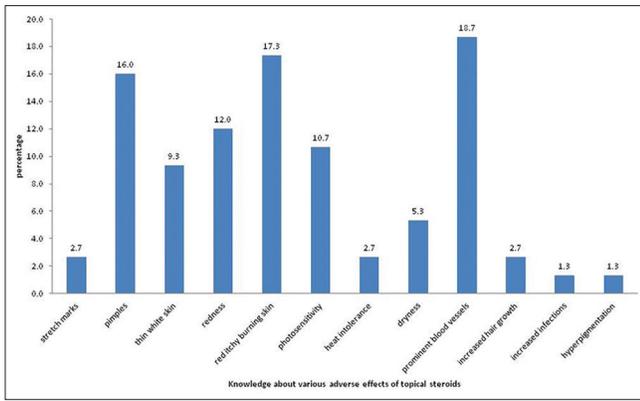


Figure 3: Frequency percentage of patient knowledge about adverse effects of topical steroids

allopathic doctors among the prescribing physicians, as most of the patients used a broad term physicians for both.

The results of our study corroborate with the previous studies in terms of poor knowledge, attitude and practice of patients regarding topical corticosteroids. The results showed that this topical drug is most often used in conditions where it should be avoided, thus leading to various untoward effects. Lastly, general practitioners or physicians are still the first point of contact for most of the patients in India; hence, training and sensitizing them would definitely help to control the abuse of topical corticosteroids by health care professionals.

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Conflicts of interest

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