

# FREQUENCY OF STEROID INDUCED ACNE AMONG ACNE PATIENTS

Malik Muhammad Hanif,<sup>1</sup> Madiha Shahid,<sup>2</sup> Muhammad Makki<sup>2</sup>

## ABSTRACT

**Background:** Topical corticosteroids (TCS) are commonly abused drugs because of their use in whitening creams and are important cause of steroid induced acne. **Objective:** To see the frequency of acne due to steroid abuse. **Methodology:** This cross sectional study was conducted from 1<sup>st</sup> September to 31<sup>st</sup> October 2017 and 100 acne patients included aged 10-40 years. A detailed history about the duration of use, source of prescription, type of acne lesions and other side effects were recorded. Ethical approval was sought from Institutional Review Board. Data was analyzed by using SPSS version 20. **Results:** Amongst 100 patients who fulfilled the inclusion criteria, 29% were males and 71% females. Of all 61% had used topical corticosteroids (TCS) in the form of whitening creams. Friends and family members (77%) were the most common source of prescription. Other than acne, erythema was the most common adverse effect. **Conclusion:** Topical corticosteroids are popular in our society as whitening agents especially among females and is a cause of acne.

**Keywords:** topical corticosteroids, acne, Frequency

## INTRODUCTION

Topical steroids have key role in managing different skin disorders.<sup>1</sup> Due to their rapid onset of action and easy over the counter availability, they are often misused by paramedics, pharmacists, beauticians, doctors and patients. Face is one of the common sites of misuse as steroids are commonly used in whitening and bleaching creams.<sup>2,3</sup> In addition to acne induced by steroid can results in cutaneous and systemic side effects. This can lead to atrophy of skin and tachyphylaxis, additionally it can cause burning.<sup>4-8</sup> Its withdrawal can also result in trampoline effect.<sup>9,10</sup> Steroid induced acne is generally monomorphic but both inflammatory and non-inflammatory lesions may be present. The objective of this study was to assess the frequency of steroid induced acne among acne patients.

## METHODOLOGY

A total of 100 cases of acne were enrolled in this cross sectional study, over a period of two months from 1<sup>st</sup> September to 31<sup>st</sup> October 2017 presenting in dermatology OPD in Sheikh Zayed Hospital, Rahim Yar Khan. Demographic data and history regarding duration and frequency of steroid abuse, source of prescription, type of acne lesion and any other side effects were recorded. Patients age limits of 10-40 years and those requiring topical/systemic steroids for any skin and/or systemic disorder were excluded from the study. Data analysis was done by using SPSS version 20. Ethical approval was sought from institutional review board.

## RESULTS

Out of 100 study subjects, 61 (61%) were found abusing topical corticosteroids. Out of these 61, females (75%) out-numbered males (25%) with higher incidence of acne in household females (34%) and students (30%). Topical steroids were most commonly used for whitening purpose (89%) with friends (49%) being the most common source of prescription followed by relatives (38%). There was higher percentage of acne (56%) in 10-20 years' age group.

Rural dwellers were found to be more frequent sufferers of acne steroid induce steroid (51%) and individuals with educational status below intermediate abused steroids more frequently (74%). Duration of application was less than one month in about half (54%) of the patients and majority applied creams at night (92%). Most common side effect other than acne was erythema (17%). Inflammatory type of lesions were seen in (56%) whereas 10% had non-inflammatory lesions and 34% had both as shown in the table I. Among steroids abusers, 44 (72%) were females as compared to those female patients not using TCS i.e. 27 (69%) and yet developed acne ( $p=0.7$ ) as shown in table II.

The study showed that among the patients using topical steroids 35 (57%) have inflammatory lesions and 10 (16%) have non inflammatory lesions as compared to patients not using TCS in which 32 (82%) have inflammatory lesions and only 3 (7.7%) has non inflammatory lesions ( $p=0.03$ ) as shown in table III.

1. Department of Dermatology, Sheikh Zayed Medical College/Hospital, Rahim Yar Khan, University of Health Sciences Lahore, Pakistan.

2. Department of Medicine, Sheikh Zayed Medical College/Hospital, Rahim Yar Khan, University of Health Sciences Lahore, Pakistan.

**Correspondence:** Dr. Malik Muhammad Hanif, Department of Dermatology, Sheikh Zayed Medical College/Hospital, Rahim Yar Khan, Pakistan

**Phone:** +92-333-9304445 **Email:** muhammadhanifmalik68@gmail.com

**Received:** 22-12-2017

**Accepted:** 20-05-2018

**Table I: General Description of study subjects**

Gender	Number(n)	Percentage
Male	15	25
Female	46	75
<b>Residence</b>		
Rural	31	51
Urban	30	49
<b>Age group</b>		
10-20	34	56
21-30	22	36
31-40	05	08
<b>Literacy</b>		
Illiterate	11	18
Primary	19	31
Matric	15	25
Intermediate& above	16	26
<b>Profession</b>		
Student	18	30
Laborer	04	06
Shopkeeper	03	05
Household	21	34
Housewife	15	25
<b>H/O steroid use</b>		
Yes	61	61
No	39	39
<b>Duration</b>		
0 month	33	54
1-6 months	16	26
7-12 months	04	07
13 & above	08	13
<b>Number of times/day</b>		
One	56	92
Two	04	07
Three	01	01
<b>Type of lesion</b>		
Inflammatory	34	56
Non inflammatory	06	10
Both	21	34
<b>Prescribed by</b>		
Family members	23	38
Friends	30	49
Advertisements	06	10
Beautician	02	03
<b>Purpose</b>		
Whitening	54	89
Melasma	04	07

**Table II: History of steroid use versus sex**

History of Steroid use	Sex		Total
	Male	Female	
Yes	17 (27.9%)	44 (72.1%)	61 (100%)
No	12 (30.8%)	27 (69.2%)	39 (100%)
<b>Total</b>	<b>29 (29.0%)</b>	<b>71 (71.0%)</b>	<b>100 (100%)</b>

**Table III: History of steroid use versus type of lesion**

History of steroid use	Type of lesion			Total
	Inflammatory	Non Inflammatory	Both	
Yes	35 (57.4%)	10 (16.4%)	16 (26.2%)	61 (100%)
No	32 (82.1%)	3 (7.7%)	4 (10.3%)	39 (100%)
<b>Total</b>	<b>67 (67.0%)</b>	<b>13 (13.0%)</b>	<b>20 (20.0%)</b>	<b>100(100%)</b>

## DISCUSSION

Use of topical corticosteroids as a depigmenting agent has become quite common in our society. In a representative sample of patients visiting dermatology clinic in SZMC (a tertiary care teaching setup), 61% were found using topical steroids. In this study, females are found more common users (75%), possibly because of their enhanced concern for cosmetic appearance. Study done by Sheikh Manzoor,<sup>2</sup> Shakya Shrestha<sup>3</sup> and Harihara subramony Ambika,<sup>4</sup> showed similar results. Majority of the patients in our study were in 10-20 years age group (56%), a finding similar to that found by Feleke Tilahun Zawdu<sup>5</sup> Rajkumar Kothiwala<sup>6</sup> but different from study done by Asha Nyati.<sup>7</sup> In our study, household females (34%) and students (30%) were more common users, a finding different from that observed by Edith Nmoruka<sup>8</sup> where business men/women used it more commonly.

Most common reason for steroid abuse was as a depigmenting agent. Similar results were seen in a study by Ajay Kumar,<sup>1</sup> Harihara subramony Ambika,<sup>4</sup> Feleke Tilahun Zewdu.<sup>5</sup> Friends are the main source of steroid prescription, a fact different from that found by Ajay Kumar<sup>1</sup> where they were mainly suggested by beauticians but Rajkumar Kothiwala<sup>6</sup> found that pharmacists mainly

prescribed these drugs. Rural dwellers abused these drugs more than the urban ones. These results are similar to the study done by Sheikh Manzoor<sup>2</sup> but different from that of Rajkumar Kothiwala.<sup>6</sup> Patients with low educational status i.e. below intermediate in our study abused steroids more frequently- a finding similar to that of Ajay Kumar.<sup>1</sup>

Duration of use of TCS varied widely from one month to years. Majority of the patients used it for 1-6 months. Same has been observed by Asha Nyati but different one by Ajay Kumar.<sup>1</sup> In our study most of the patients used TCS at night only, but Edith Nmoruka<sup>8</sup> observed twice daily use. Inflammatory lesions were found more common in our study but not so by Rajkumar Kothiwala.<sup>6</sup> Other than acne; erythema was most common adverse effect a finding similar to that observed by Asha Nyati<sup>7</sup> and Ajay Kumar.<sup>1</sup>

## CONCLUSION

Our study showed that steroid induced acne is quite common. Cosmetic concerns, over the counter availability of topical corticosteroids and media advertisement of fairness creams in our part of the world are major reasons for steroid abuse affecting mainly younger females. To overcome this problem, public needs to be made aware of and regulatory measures taken to stop the non-professional use of these drugs.

## REFERENCES

1. Ajay Kumar. Pattern and Predictors of Topical Corticosteroid Abuse on Face. Research Journal of Pharmaceutical, Biological and Chemical Sciences: May 2015: 1154-1159
2. Sheikh Manzoor. Topical Steroid Abuse: A clinico-epidemiological Profile. International Journal of Contemporary Medical Research 2017;4(7):1454-1456.

3. Shakya Shrestha S. Study on Corticosteroid Use Pattern in Dermatological Practice and Investigating Adverse Effect of Corticosteroids Including its Associated Factors. Khatmandu University Medical Journal 2015;13(3):261-267.
4. Hariharasubramony Ambika. Topical Corticosteroid Abuse on the Face: A prospective Study on Outpatients of Dermatology. Our Dermatol Online. 2014;5(1):5-8
5. Feleke Tilahun Zewdu. Topical Corticosteroid Misuse among Females Attending at Dermatology Outpatient Department in Ethiopia. Tricology and Cosmetology Open Journal. 2017;1(1):33-36
6. Rajkumar Kothiwala. Alarming Topical Steroid Misuse on Face: A Descriptive Study. International Multi-specialty Journal of Health 2007;3(7): 2007 July: 210-214.
7. Asha Nyati. Topical Steroid Abuse on Face: A Prospective Study from a Tertiary Care Centre of North India. International Journal of Research in Dermatology. 2017 Sep;3(3):433-438
8. Edith Nmoruka. Topical Steroid Abuse: Its Use as a Depigmenting Agent. Journal of The National Medical Association. 2006 June;98(6):934-939
9. Anil Abraham, Gillion Roga. Topical steroid damaged skin. Indian J. Derma 2014;59(5):456-9
10. Rapaport MJ, Lebwohl M. Corticosteroid addition and withdrawal in atopic red burning syndrome. Clin. Dermatol 2003;21:201-14

**Article Citation:** Hanif MM, Shahid M, Makki M. Frequency of steroid induced acne among acne patients. JSZMC 2018;9(2): 1413-1415