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Knowledge and attitude based study regarding use of topical corticosteroids among medical students and interns.

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Abstract
Topical steroids are one of the drugs commonly prescribed for a variety of skin conditions. But misuse of topical corticosteroids, especially over the face for cosmetic benefits is an increasing problem in India. Lack of awareness and the over the counter availability of obtaining topical corticosteroids without a scheduled prescription are important underlying factors. As the upcoming prime person of consultation, the young budding medical students have an important role in controlling topical corticosteroid abuse. This study is basically aimed to evaluate the knowledge and attitudes regarding the use of topical corticosteroids in different classes of medical students and interns. A cross-sectional survey was carried out among medical students and interns using convenience sampling method. A total of 150 peer reviewed questionnaires which included questions analysing the basic knowledge about the use and adverse effects of topical steroids were distributed, valid responses were obtained and these were recorded .Based on the responses received the knowledge and attitude of the students wereanalysed. Majority of the students had mixed opinions about the fact that different classes of topical corticosteroids exhibit different effects. About 92% of the students opined that topical corticosteroids can have significant cutaneous adverse effects, and that they can play an important role plays in preventing topical steroid abuse: Also the need to hold over the counter dispensing of topical corticosteroids was also opined by 94% of the students. However a significant gap of knowledge was noted regarding the different classes and strength of the topical steroids because only 62% of them gave valid responses about the dosage form strength and class of the various topical steroids. Also, significant gap in knowledge related to specific side effects and awareness of different classes of topical corticosteroids was noted among the students. Knowledge regarding the rational use of topical corticosteroids should be enhanced among the medical students by conducting various group discussions and seminars.

Keywords: *medical students; topical corticosteroid; topical steroid abuse.*

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I. Introduction

The misuse of topical corticosteroids, over the face, is an increasing problem seen in India. The exact magnitude of the problem is not very clear, but according to various surveys many students are reported abusing topical steroids[1]. Many trials in India showed that patients especially young were using TCS over a long period in an unsupervised manner for various purposes, including improvement of texture of skin, acne etc. Without prescriptions TC were obtained in many of the patients, of which more than 80% were for potent/super-potent steroids[1]. The role of medical students is very crucial in preventing TC abuse, especially in the context of avoiding inappropriate over the counter prescriptions .The topical steroid use on face can lead to many adverse effects like atrophy of the skin, hirsutism, acne, perioral dermatitis, and telangiectasia's. Its prolonged and indiscriminate use can lead to development of a condition known as topical steroid-dependent face[2]. It is characterized by severe erythema, burning and scaling of the face. When attempted to withdraw, the rebound symptoms of erythema, scaling etc occurs which leads to successive use of more and more potent TCs to avoid the rebound effects associated with withdrawal, a condition known as steroid addiction. Moreover, long-term use of potent TCS may also lead to systemic side effects such as adrenal suppression and cushingoid appearance. Early awareness of the potential problems associated with TCS abuse will help build a community of medical students who are more likely to contribute to the rational use of TCS in the future. Therefore, it is important that medical students are aware of the different types of TCs and the potential adverse effects of TCS abuse. This study aims to assess the knowledge and attitudes of medical students regarding the proper use of TCS and its abuse.

II. Review of literature and background

Topical steroids are one of the common drugs prescribed for diseases such as Psoriasis, lichen planus, lichen sclerosis, atopic dermatitis, discoidlupus; limited vitiligo etc[1-2,]These preparations are available in different dosage forms. The world Health Organization has listed TCS as essential drugs for treating a broad range of inflammatory skin disorders[2]. The United States classification includes seven classes, with class I being superpotent and class VII the least potent.

They have anti-inflammatory, antimitotic and immunosuppressive effect[3].The anti-inflammatory effect is due to vasoconstriction of blood vessels within upper dermis, and the synthesis of lipocortin which inhibits phospholipase A2 decreasing production of prostaglandins and leukotrienes; the antimitotic effect is due to the inhibition of proliferation of the cells and the immunosuppressive effect being mediated by inhibition of humoral factors involved in inflammatory response.

Topical steroids are better absorbed and more permeable in regions of thin epidermis, such as the eyelid, compared to thicker regions of epidermis, such as the sole. The penetration increases two to ten-fold in diseased states, such as inflammation and desquamation3.Patients need to be monitored carefully as unsupervised use of these medications can result in local and systemic adverse effects. The duration of treatment should not be greater than 2 to 4 weeks. It is recommended for once to twice daily usewith suggested dose of FTU which equals 0.5grams. Guidelines to prevent adverse effects include the use of lower-potency steroids, morning-only applications, and alternate-day treatment[3].

The adverse effects of topical corticosteroids can be divided into local and systemic effects ;the most common adverse effects include atrophy, striae, rosacea, perioral dermatitis, acne, purpura Plethoric face ,telangiectasia Facial hypertrichosis , Cutaneous atrophy, Stretch marks ,Hyper-hypopigmentation, Pyoderma , Tinea incognito etc.

They are contraindicated for bacterial infections as their anti-inflammatory and vasoconstrictive effect will mask the infection, ultimately delaying diagnosis and treatment. They should also be avoided in impetigo, furuncles and carbuncles, cellulitis, erysipelas, lymphangitis, erythrasmacandida and dermatophytes[3].

In the recent years it has been noted that they are being over used and misused especially by young individuals for cosmetic purposes like skin brightening, treating acne scars etc. In India around many of the young are reported to use topical steroids without supervision [4].Over the counter availability, affordability and irrational prescriptions especially by inexperienced medical professionals makes the situation worse and various side effects like resistant dermatophyte infections, cutaneous hypertrophy, acne etc has increased over the past years [4].

The role of medical students is very crucial in preventing its abuse, especially in avoiding inappropriate prescriptions for patients who are using topical steroids for various indications.Early awareness of the potential risks associated with its abuse will help build a community of students who are more likely to contribute to the rational use of topical steroids in the future[5].Hence this study is being conducted to evaluate the knowledge among medical students regarding the proper usage of topical corticosteroids.

A questionerrie based study conducted in 2019 among 200 students in medical university of northindia by Paul verma et al showed that there was a lack of basic knowledge among medical students regarding the use of topical corticosteroids[4].

A study conducted in 2019 among 400 Dental students Saveetha dental college Bengaluru by Guru E prasanna et all showed that nearly 30% of students were unaware about the therapeutic use of corticosteroids[5].

A study conducted in 2018 among 110 pharmacy students in a teritary care hospital kerala by firoze kaliyadan et al showed that there was a significant gap of knowledge about the adverse effects and various strength of topical corticosteroids among the students[6].

A study conducted in 2017 among 294 pharmacists in UK by wing man leu et al showed that there was a significant gap of knowledge among the pharmacists about the potency and adverse effects of topical corticosteroids[7].

A study conducted in 2017 among 300 physicians in Saudi by Sarah f alsukait in a tertiary care hospital showed that only 62%were aware about the proper usage of topical steroids[8].

III. Materials And Methods

Study design

Cross sectional study

Study population

Inclusion Criteria

Undergraduate medical students and Interns in SNIMS.

Students who are willing to sign the informed consent.

Exclusion Criteria

Students who are not willing to sign informed consent.

Sample Size: 160
Sample size estimation:
The following formula is used to compare means with a given power
$N=Z^2a/2*P*(1-p)*D/ E^2$

Where P is the prevalence or proportion of event of interest for the study
E is the precision (or the margin of error) with which a researcher wants to measure something, a/2 =1.96, D is the design effect reflects the sample design

Study duration*:* 6months [from November 2021 to April 2021]

Obtaining Ethical Clearance approval= 2 months

Data collections= 2months

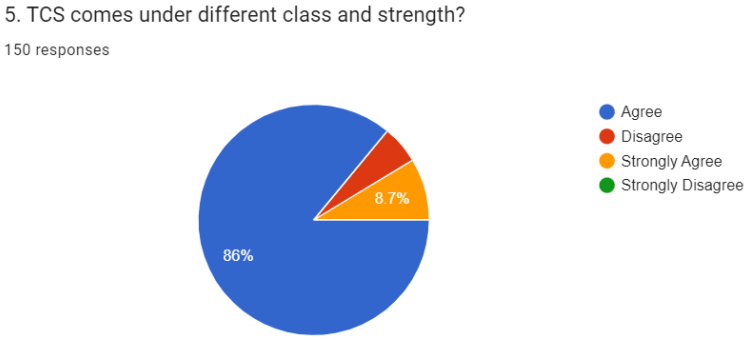
Data tabulation and analysis= 2month

IV. Methodology

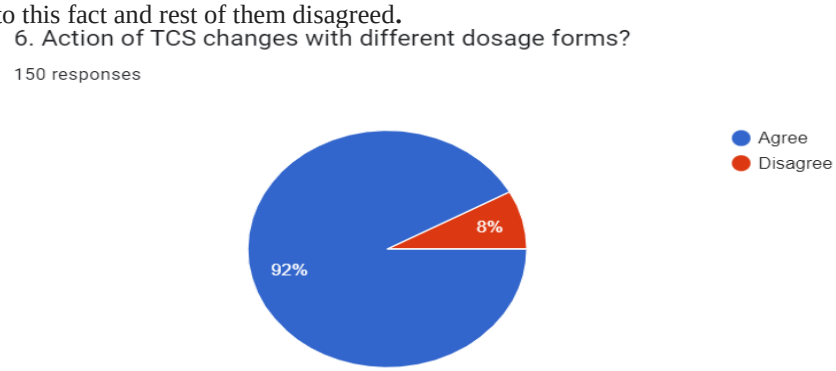
This study was a cross-sectional survey carried out in our medical college. A peer reviewed questionnaire was used for the data collection which included certain valid questions which were simple and which could analyse the knowledge and attitude about the use of topical steroids among the students. The initiation phase commenced with validation of the questionnaire, after which the questionnaire was pilot tested among ten undergraduate students and was further refined. The questionnaire had one section dealing with basic demographics – age, gender etc, class of study, followed by a general awareness section which covered awareness regarding different class/potency of topical steroids and its possible adverse effects. Further questions covered any prescribing experience, if present, and reflection on the role of the students in preventing TC abuse. A convenience sampling method was used. The questionnaire was distributed to a convenience sample of 150 medical students our institute. The paper-based questionnaire was distributed to 150 medical students, including both undergraduates and interns. A total of 150 valid responses were obtained.

V. Results

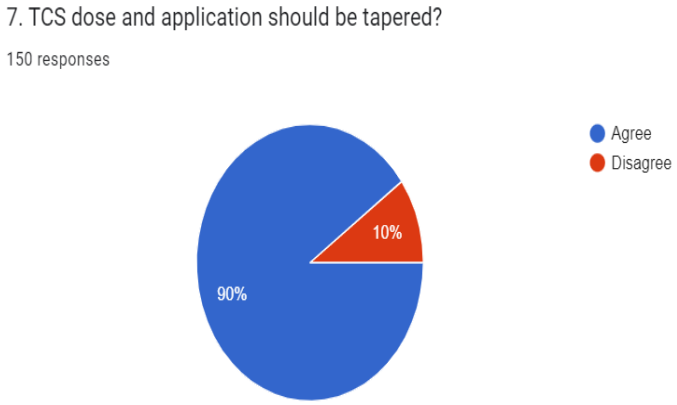
The age of the students who took part in the study were between 18 and 24 and the most common age group among them was 21years of which majority of them were females (83%).
The knowledge and attitude based responses for the questionerrie were as follows



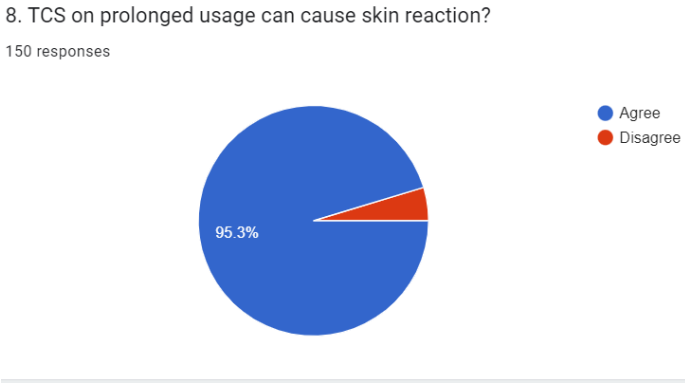
Only 8.7 % of the students were sure that topical steroids have different class and strength. Rest 86%of the students agreed to this fact and rest of them disagreed**.**



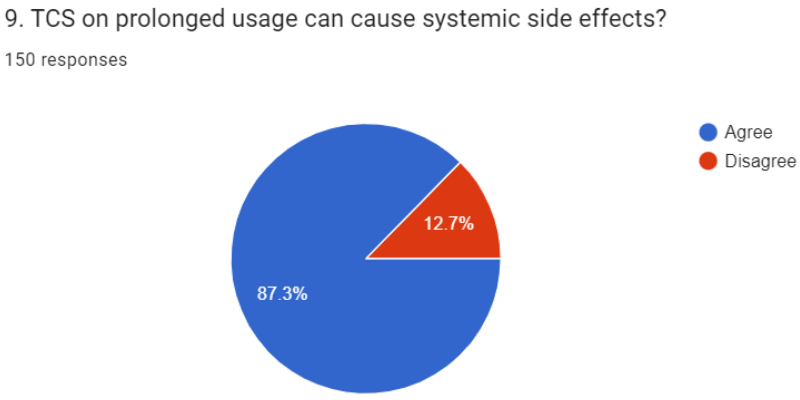
Even though 92% of the students agreed to the fact that the action of Tcs changes with the dosage forms there were still 8% of the students who disagreed.



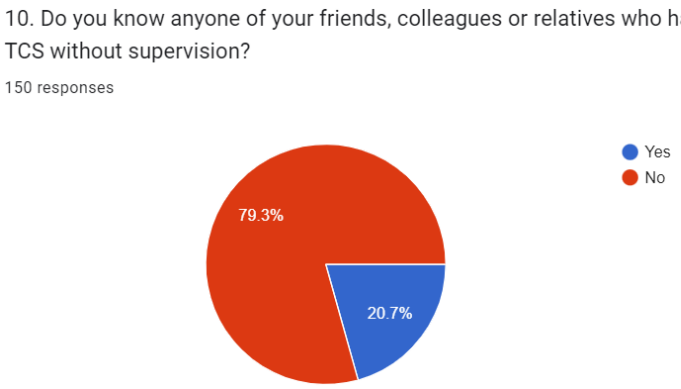
About 90%of the students agreed that the dose and application of tcs should be tapered;but a 10%of students disagreed.



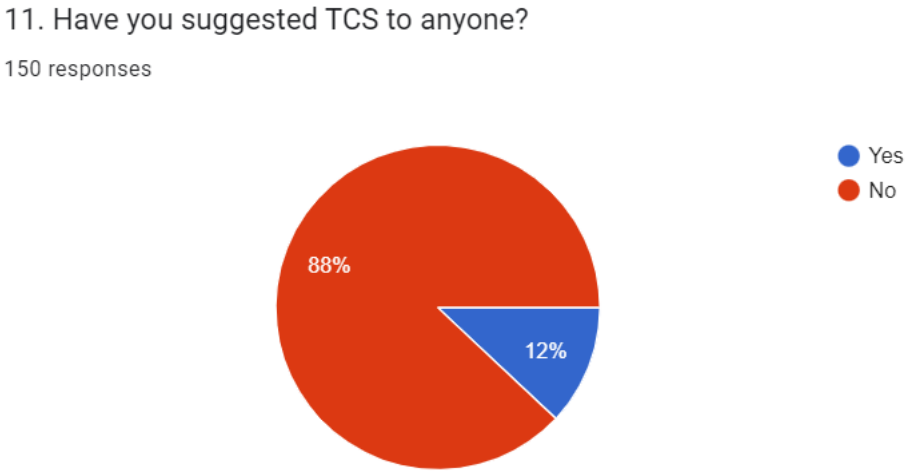
Majority of students were aware about the dermatological consequences of prolonged use of topical steroids.



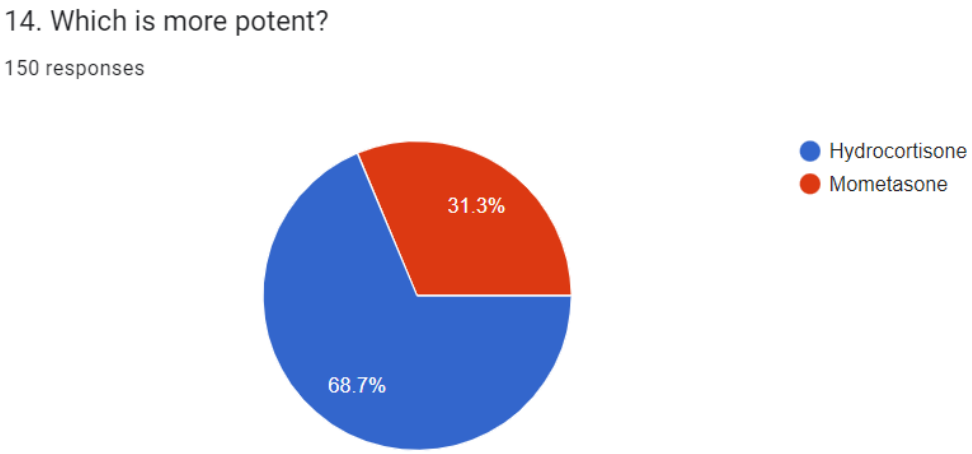
12 percent of the students seemed to be less aware of the fact that prolonged use of tcs can cause systemic side effects as well.



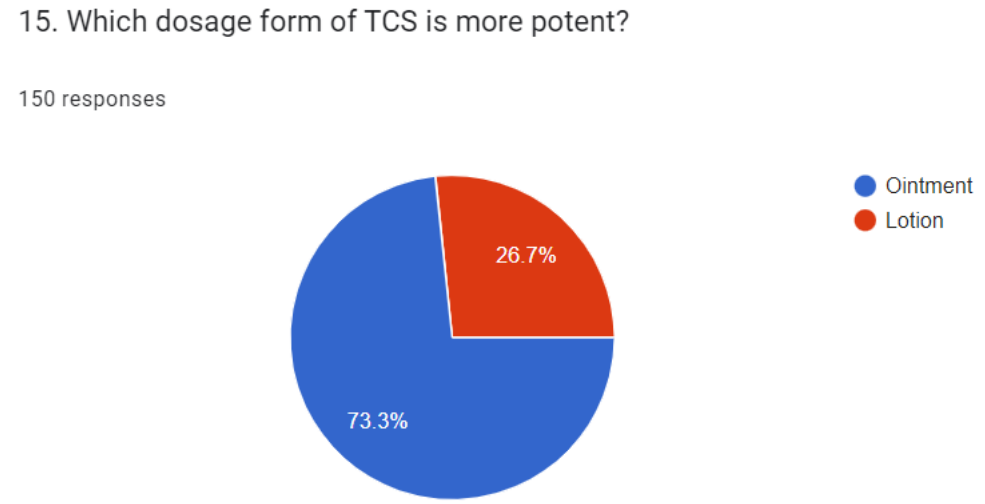
79% of students agreed that they have seen their friends or relatives using tcs without supervision.



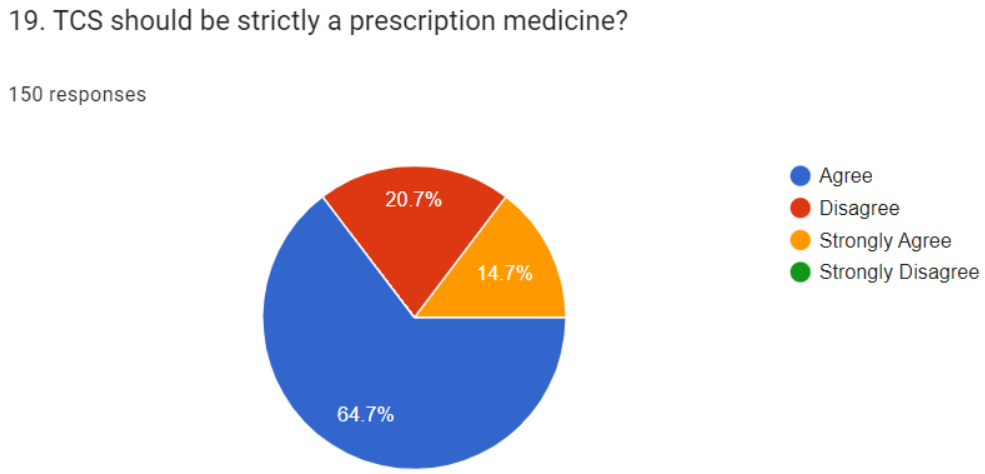
12% of the students answered they have suggested TCS.



Regarding the potency, majority i.e., 68.7% of the students did not answer correctly.



Regarding the potency of dosage form, around seventy three per cent of students answered correctly while 26 per cent of the students did not.



Only 64% of the students strongly agree to the fact that TCS should be strictly a prescription medicine.
From the above responses, it is clear that even though majority of the students are aware about the application methods of topical steroids, most of them are seemed to be not aware about the potency of various classes and dosage forms of TCS and its specific adverse effects as well.

VI. Discussion

Topical steroid abuse, leads to different types of adverse reactions and skin damage is one of the major problems, especially among the young. It is a global issue now .Lack of awareness and over the counter availability can be the underlying cause for this. Besides this, the prescriptions are often reusedwithout instructions and given for wrong indications by the medical student and interns also .This studywasdone to assess the level of knowledge and awareness of medical students and interns regarding the use and misuse of TCs. In a country like India, as per the previous studies, it was observed that people use it just like any cosmetic cream for various purposes, once they happen to see the skin thinning and improvement in texture of skin and they continue to use it without consultation by a qualified specialist[6]. Previous studies have indicated that the medical students can playan important role in the prevention of topical steroid abuse use[7]. Early awareness about the proper use of topical steroids among the medical students and interns can prevent its abuse. Fromthis study,it is concluded that majority of the students were aware of the fact that different classes of TCs have differences in the final effects. There were mixed opinions among the students about the cutaneous adverse effects, the importance of their role in the prevention topical steroid abuse. There was a significant gap in knowledge related to specific side effects and awareness of different classes of TC was noted in the study. So this can affect their approach towards prescribing topical steroids rationally. Various group discussions and awareness programscan be designed for the students and interns toovercome this knowledge deficit

VII. Conclusion

Medical students and interns have an important role in preventing topical steroid abuse early awareness campaigns and programmes can prevent irrational prescriptions and topical steroid abuse. In this study,eventhough it was observed that the students has some awareness regarding the use and adverse effects of TCs, there is still a need to increase their clinical awareness about the various classes ,dosage forms and potencies of the topical steroids. Also, the adverse effects of these medications should be taken in to serious consideration. Awareness regarding the proper and rational use of TCs should be increased among the students, and the dermatologists and pharmacologists should play a key role in the awareness programmes. Various group discussions and lectures can be organised for the same and develop a community of students who can rationally prescribe topical steroids in future.

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