

# Acid burn- Self inflicted

Riffat Naseem, Safoora Aamir, Amber Yasmin

Department of Dermatology, Sheikh Zayed Medical Complex, Lahore.

**Abstract** Acne is one of the most common dermatoses presenting in dermatology clinics with the worldwide prevalence of 9.38%. An unfortunate sequel of acne is scarring which is usually atrophic but can be hypertrophic as well. Treatment of acne scarring has been greatly modified with the advancement in aesthetic medicine and cosmetology and clinicians can now choose from a variety of options tailoring to the specific needs of the patient and ultimate aesthetic goal. This report presents the case of a patient with severe acne scarring who self-medicated with TCA peel leading to superficial burns. This case is being reported to emphasize the importance of application of these peels under the direct supervision of an experienced healthcare professional or a dermatologist. The sale of chemical peels without prescription of a dermatologist should be banned and masses should be educated regarding the side effects of these seemingly harmless topical treatments.

**Key words**

Trichloroacetic acid; Acne scarring; Chemical peels; TCA; Chemical peel.

## Introduction

Acne is the eighth most common skin disease.<sup>1</sup> It is a chronic inflammatory skin condition affecting mainly teenagers and young adults with an incidence ranging from 35-100%.<sup>1</sup> The physical, mental and social impact of acne is comparable to major systemic chronic diseases.<sup>2</sup> Most common permanent consequence of acne is post-acne scarring<sup>3</sup> adding to the disease burden. Sometimes this desperation may lead to a situation which we are reporting here.

## Case report

A 21 year old girl presented to Dermatology Department Shaikh Zayed Hospital, with history of burn on her face due to self -application of 50% TCA for one day. On examination, her face was red, swollen and she was having visible

marks of application of TCA. She was suffering from acne for the past 1 year for which she tried multiple oral and topical treatments. Her acne resolved but she developed post acne scarring. Due to her major concern about acne scars, her sister searched YouTube to find some solution. She came across TCA peel as remedy for acne scars while searching, so she ordered 50% TCA Online from Daraz (**Figure 1**) and applied on patient's (her sister's) face with cotton buds. Just after application, the patient developed severe pain, redness and burning on her face. She put ice cubes on her face to get some relief but no other topical or systemic treatment. She remained uncomfortable the whole night and in the morning she noticed that her face was swollen along with pain, redness and burning of the same site. She presented in our department the same day (**Figures 2, 3**).

## Discussion

Chemical peeling, using a multitude of peeling agents, has been used for decades to improve skin quality and to address concerns such as pigment irregularities, scarring, fine lines and wrinkles.<sup>4</sup> The concept behind using a chemical

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**Address for correspondence**

Dr. Amber Yasmin

Department of Dermatology,  
Sheikh Zayed Medical Complex Lahore.

Email: amberyasmin@yahoo.com



Figure 1



Figure 2



Figure 3

peel is to produce a controlled burn of the skin which subsequently leads to neo-collagenization and resultant resurfacing leading to brighter and less textured skin.<sup>5</sup>

Among the peeling agents TCA is a very versatile and popular agent among practitioners. It is one peel which can be used to achieve superficial, medium or deep peel by changing its concentration and number of layers on the skin. TCA acts by producing coagulative necrosis of cells and proteins<sup>6</sup> producing a frosting appearance on skin. Once applied on the skin it doesn't need neutralization, the desired depth can be determined by experienced physician by the degree of frosting achieved.

When using TCA or any other peel, there are many factors which have to be kept into account especially in Asians or persons of skin of colour, due to increased risk of PIH or even scarring.<sup>7</sup>

Our patient a young girl influenced by social media and DIY procedures done by influencers on YouTube and Instagram, purchased 50% TCA online and applied on her acne scars at home leading to 2nd degree acid burn.

All chemical peeling agents are "Acids", which in safe and experienced hands are meant to produce a controlled injury of skin which is achieved by neutralizing the acid after required

time or as assessed by changes observed on the skin, such as degree of erythema or frosting, by the experienced practitioner.

Online selling of strong peels should be discouraged; also general public should be made aware about such harmful consequences of self-application of peels. Only very mild AHA or BHA peel should be accessible for home use.

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**Author's contribution**

**RN, AY:** Identification and management of the case, manuscript writing, has given final approval of the version to be published.

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## References

1. Heng AHS, Chew FT. Systematic review of the epidemiology of acne vulgaris. *Sci Rep.* 2020;**10**(1):5754.
2. Knutsen-Larson S, Dawson AL, Dunnick CA, Dellavalle RP. Acne vulgaris: pathogenesis, treatment, and needs assessment. *Dermatol Clin.* 2012;**30**(1):99-106.

3. Ahramiyanpour N, Rastaghi F, Parvar SY, Sisakht AK, Hosseini SA, Amani M. Subcision in acne scarring: a review of clinical trials. *J Cosmet Dermatol*. 2023;**22(3)**:744-51.
4. Lee KC, Wambier CG, Soon SL, Sterling JB, Landau M, Rullan P, *et al*. Basic chemical peeling: superficial and medium-depth peels. *J Am Acad Dermatol*. 2019;**81(2)**:313-24.
5. Truchuelo M, Cerdá P, Fernández L. Peeling químico, una herramienta útil en la consulta. *Actas Dermo-Sifiliográficas*. 2017;**108(4)**: 315-22.
6. Otley CC, Roenigk RK, editors. Medium-depth chemical peeling. *Semin Cutan Med Surg*. 1996;**15(3)**:145-54.
7. Bhardwaj V, Sharma K, Maksimovic S, Fan A, Adams-Woodford A, Mao J. Professional-Grade TCA-lactic acid chemical peel: elucidating mode of action to treat photoaging and hyperpigmentation. *Front Med*. 2021;**8**:617068.