

# Role of Onion Extract Application in Post-Varicella Scars

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## Abstract

The efficacy of onion extract application in post varicella patients to reduce the hyperpigmentation caused due to the lesions secondary to the disease. Although the effectiveness and the process by which it reduces pigmentation is not established and evidence is inadequate, in our study, onion extract was applied to a subject with post varicella scars and we evaluated the efficacy.

**Keywords:** Onion extract, Varicella scars, Scar reduction, Varicella zoster.

## Introduction

Chickenpox or varicella is a contagious disease caused by the varicella-zoster virus (VZV). The virus is responsible for chickenpox (usually primary infection in non-immune hosts) and herpes zoster or shingles (following reactivation of latent infection). Chickenpox results in a skin rash that forms small itchy blisters which scab over. Varicella rash commonly evolves into permanent depressed scars, leaving life-long cosmetic issues for patients. Although there are a lot of reviews on depressed scars, the viral aetiology and the unique scar morphology of post varicella scar discriminate it from other depressed scars. Therefore, it is required to assess the efficacy of scar removal

modalities on these scars, specifically. Yet, despite the prevalence, there is no comprehensive review on chickenpox scars' treatment, particularly. Evidence for onion extract usage and the process by which it reduces pigmentation and scarring in varicella-zoster is inadequate. The aim of the study is to evaluate the effectiveness of onion extract in post varicella scars.

## Materials and Methods

This study was conducted in a tertiary care centre in the department of plastic surgery after getting the departmental ethical committee approval. Informed consent was obtained for examination and clinical photography. The subject was 23



**Fig. 1:** Pre intervention with varicella scars

years old male with history of varicella infection 2 weeks back following which he started noticing scars which were pigmented depressed scars with Vancouver Scar Scale (VSS) 6 (figure1). The patient presented to our OPD for scar management and was given onion extract for topical application daily for 6 weeks.

## Results

After application of onion extract over a period of 6 weeks, in our study, we were able to successfully reduce the VSS and subjective improvement was present.(figure 2)

No adverse local or systemic effect was noted with use of onion extract.

## Discussion

Varicella or chickenpox is caused by the varicella-zoster virus (VZV), a herpesvirus with wide epidemiology. Post-primary infection, the virus is known to show a dormant residence in the body.<sup>1</sup>

Spread of infection is via inhalation of infected aerosolized droplets. The virus can spread rapidly and has a high secondary attack rate. The initial infection is in the mucosa of the upper airways. After 2-6 days, the virus enters the circulation and another bout of viremia occurs in 10-12 days. At this time the characteristic vesicle appears. IgA, IgM, and IgG antibodies are produced but it is the IgG antibodies that confer lifelong immunity. After the primary infection, varicella localized to sensory nerves and may reactivate later to produce shingles.<sup>1</sup>

Atrophic scars like PVS are very challenging to treat. Therefore, many techniques have been suggested to enhance the efficacy of treatment. Various methods are available for scar reduction post varicella infection. Among the various methods tried, an extract of *Allium cepa*, or onion, is one of the newer methods explored.<sup>2</sup> Although no extensive study is there in the literature to support the use of onion extract to reduce scar formation, some studies have found to have Quercetin, the active ingredient, which has been shown in vitro studies to decrease fibroblast proliferation, inflammation, extracellular matrix deposition, and



Fig. 2: Post onion extract application.

stabilized mast cells.<sup>3, 4, 5</sup>

### Conclusion

We have found that onion extract has been very useful in management of post varicella scars but requires large scale randomized trials for large scale application to explore the potential of onion extract in the role of scar reduction.

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