

# Microneedling-Assisted Topical Tranexamic Acid Solution versus 4% Hydroquinone for Treating Melasma: A Split-Face randomized study

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## Abstract

Background Melasma, also known as chloasma or mask of pregnancy, is a common, acquired, hyperpigmentary disorder usually affecting females. Tranexamic acid (TA), a derivative of amino acid lysine has shown promising results over the past few years when used along with other therapies as well as when used as a stand-alone therapy. Aim of the Work In this study, we aimed to evaluate and compare the effectiveness of topically applied tranexamic acid after microneedling versus topically applied hydroquinone 4% alone in patients with melasma. Patients and Methods Fifty selected patients were divided randomly according to the random number allocation method into two groups (25 patients each) of A (topical 4% hydroquinone, nightly application) and B (microneedling + topical 4% TA, every other week). Results After Eight weeks of treatment, the mean modified MASI score of the HQ treated side changed from  $6.604 \pm 4.02$  to  $3.032 \pm 1.19$  with a mean decrease percentage of  $54.8\% \pm 19.4\%$ . This reduction in modified MASI score was found to be statistically significant, ( $p < 0.001$ ). MASI score of group B (TA + microneedling) changed from  $6.348 \pm 3.84$  to  $3.712 \pm 1.19$  with mean decrease percentage of  $57.4\% \pm 23.4\%$  which was also statistically significant, ( $p < 0.001$ ). Conclusion We demonstrated safety and efficacy of both used modalities and with minimal side effects. Topical HQ application achieved minimal non significant higher satisfactory results among raters and subjects

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