

## ABSTRACT TITLE

Evaluating the Efficacy of the Melanocyte Keratinocyte Transplantation Procedure in the Treatment of Vitiligo: A comparative study of two different harvesting techniques

## AUTHORS

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## DISCLOSURES

There are no financial conflicts of interest to disclose.

## INTRODUCTION

Vitiligo is a dermatologic disorder characterized by depigmented areas of skin caused by immune-mediated melanocyte destruction. There are limited treatments for vitiligo and no known cure, although there are some effective treatments including NBUBV light treatment and JAK inhibitors. Nonetheless, for many patients, even after light therapy or JAK inhibitors, chronic lesions of vitiligo can persist that remain devoid of melanocytes.

Surgical transplantation approaches for vitiligo are a good option for treating chronic vitiligo. Recent studies have demonstrated that the Melanocyte-Keratinocyte Transplantation procedure (MKTP) is a more effective method to treat chronic vitiligo. However, this technique requires specialized equipment and additional time to dissociate the epidermal suspension. Moreover, robust endpoint analysis measures have not been applied to analyzing the results of these studies, which are necessary to compare the efficacy of different techniques.

## OBJECTIVES

To measure the impact of cellular harvesting methods on MKTP outcome, we sought to compare the result of the MKTP procedure when donor skin is harvested with a surgical blade or a suction blister in order to determine how different harvesting techniques a

## MATERIALS/METHODS

In this non-randomized clinical trial, we included 14 patients which were treated by MKTP where the skin was harvested with either surgical blade or suction blister. The patients were recruited if they had verified diagnosis of vitiligo by board-certified dermatologist, a 5 cm<sup>2</sup> area of vitiligo and an area on the upper thigh that was not affected by the disease, were over 18 years of age at the time of signing informed consent form and ability to understand, abide by and participate in study procedures. We evaluated response to treatment in the transplanted areas before and 6 months after the procedure by photography to measure the change in surface area with image J.

## DISCUSSION/RESULTS

The data showed that on average, MKTP with the surgical blade yielded an overall response rate of 86% as compared to an overall response rate of 57% with the suction blister technique. When the surface area change was measured with Image J, there was a 23% ± 24% reduction in vitiligo area

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after harvesting skin by surgical blade compared to a  $10\% \pm 18\%$  reduction when the skin was harvested via suction blister. The complications observed with blade harvesting were pain, burning and post-inflammatory hyperpigmentation versus mild erythema for suction blister grafting. In addition, dissociation times were longer after blade harvesting.

## CONCLUSION

Although the percent response and percentage reduction in vitiligo skin area were numerically greater among patients receiving MKTP with a blade than those receiving suction blistering, this difference was not statistically significant. Due to the small number of patients, associations between treatment outcome and demographic and clinical subgroups were not statistically meaningful. Interestingly, Image J did not appear to be a reliable method to measure changes in surface area, although trends amongst reviewers remained consistent. These observations suggest better image segmentation approaches are needed to quantify the degree of response to surgical therapies.

## BIOGRAPHY

I am a research fellow at UC, Irvine. I received my medical degree from Tehran Azad University, Iran and I did my dermatology residencies at Varna university in Bulgaria and Tehran University in Iran. I work with Dr. Anand Ganesan who is a vitiligo expert and my research is focused on pigmentary disorders and vitiligo.

One novel study I am working on is a study for monitoring the vitiligo therapy response by in vivo MPM imaging. I am also the main researcher of a multi-center survey on the effect of phototherapy on the quality of life of vitiligo patients.