

Alhamd treatment of vitiligo, a study of needling+ excimer laser @308nm

Abstract

Introduction: Vitiligo is a chronic autoimmune disorder where pigment producing cells in skin called melanocytes are attacked and destroyed causing milky white patches in skin. Our study to treat vitiligo is a combination of EXCIMER LASER @308nm,^{1,2,3} + NEEDLING.⁴

This study is based on a theme that the melanocytes in the normal skin around the vitiligo patch can be pushed into the Vitiligo patch and subsequent EXCIMER induced melanogenesis treats vitiligo.⁵

Methods: We use a 30G, 4mm stem needle. Push it through the normal skin into the vitiligo patch at the level of the D-E junction parallel to the skin. This needle push called NEEDLING drags epidermal cells including melanocytes as micro inoculation to produce multiple small populations of melanocytes in the vitiligo area,⁶ which is then exposed to EXCIMER to cause melanogenesis and hence repigmentation of the area.^{3,5,7} Multiple needle pushes are made through normal skin around the vitiligo patch, into the vitiligo patch. These needle pushes are done 1cm apart. All patients are having needling once weekly and EXCIMER 2-3 times per week.^{4,6}

A study of this combination was done over 50 patients, in both sexes in different age groups from October 2021 to September 2022 and follow up still continued. A comparison was also done with EXCIMER alone (without needling) in some of these patients at some patches.⁸ Inclusion and exclusion criteria, a result criteria and a study Performa with follow-up details was set. Photos of all the patients were taken before treatment and then every 3 weeks.

Results: Our combination treatment has proved very effective for vitiligo as compared to EXCIMER alone. Most patients had fast repigmentation. The best results are on the face and trunk^{4,6} with more than 90% repigmentation in all age groups. Repigmentation is good but slow towards peripheral parts.^{9,10} Repigmentation was specially noticed to start from the edge of the vitiligo patch (where needling is done) as tiny black dots and further needling through these dots gradually repigmented the central areas.⁴ (Figure 2, 3, 4, 6). Repigmentation is also good over areas with grey hair with this technique as needling uses melanocytes of the skin surrounding the vitiligo patch rather than the follicular cells. This further strengthened the idea of needling as a useful combination with EXCIMER.⁶

Keywords: excimer @308nm, needling with 30g/4mm, vitiligo, melanocytes, Alhamd

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Hamd Sheikh, M Iftikhar Sheikh

Consultant dermatologist, Alhamd Skin clinics Lahore, Pakistan

Correspondence: Dr Hamd Sheikh, Alhamd Skin clinics
Lahore, Pakistan, Tel +92321 9423032,
Email hamdiftikhar@yahoo.com

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Introduction

Vitiligo is an acquired disease of depigmentation of the skin occurring without any inflammation characteristics. It is the selective and often continuous loss of epidermal melanocytes, most commonly affecting the skin. There is occasionally involvement of mucosa and hair. Causation may still be unknown but an underlying autoimmune disorder is highly considered.

Etiology

Vitiligo is a complex phenomenon that involves a play of multiple factors.

Genetics

Vitiligo seen in the families of patients is an indication that genetic factors play an important role in the occurrence of the disease. Inheritance can occur in autosomal dominant pattern. The relative risk of vitiligo in first degree relative is increased by seven-to ten folds.¹¹

Autoimmune hypothesis

It is the most popular theory for the non-segmental and generalized vitiligo. Strong evidence for this theory comes from the higher

frequency concomitant autosomal diseases in vitiligo patients and response of vitiligo to treatment with immunosuppression.^{12,13}

Previous Studies

- I. Sheikh MI: Needle sheikking treatment of vitiligo@Medwin Publishers JCOS 1600010.⁴
- II. MI Sheikh: Advance Treatment of Vitiligo a study of needling + UVB @ B P International Recent developments in Medicine and Medical Research VOL 9 (PAGE 159 - 165).⁶
- III. Savant SS. Text book of dermatosurgery describes only needling.¹⁴

Inclusion criteria

- I. Study was done on 50 patients.
- II. All patients showed resistance to previous treatments.
- III. Our study included males and females between five to forty years of age
- IV. All patients are healthy and willingly participated in our study.
- V. Our target population is mainly those who had resistant vitiligo.

Exclusion criteria

- I. Pregnant ladies
- II. < five-year child
- III. Patients with any psychological illness.
- IV. Patients with other skin conditions like Contact eczema, Acne (treat first if vitiligo on face) and Rosacea (areas other than face can be treated).
- V. Patients with any type of cancers.

Treatment

All patients had photos taken at the beginning and during treatment sessions to record improvement and to evaluate the results of this treatment. The patients were given information about the procedure of NEEDLING & EXCIMER and consent taken. Needling is almost painless procedure but numbing creams can be used in sensitive patients.

A comparison was also done with EXCIMER (Figure 1a, Figure 1b) alone (without needling) in the same patient at some patches.

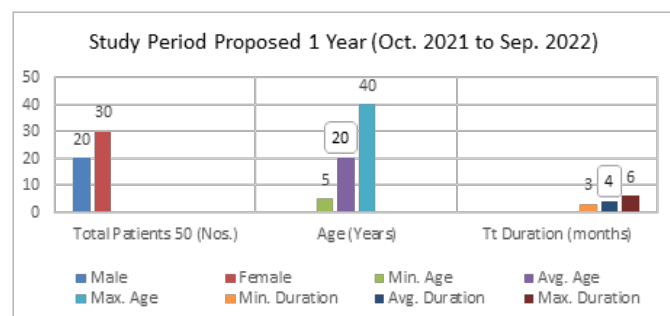


Figure 1a Excimer Laser @ 308nm.



Figure 1b Excimer Laser Machine @ 308nm.

So a study of this combination was done on 50 patients, in both sexes in different age groups from October 2021 to September 2022 (Graph 1) and follow up still continued.



Graph 1

Procedure

From the normal skin around the vitiligo patch, A 30G or 31G needle is penetrated into the vitiligo patch through epidermis. This push drags epidermal cells including melanocytes into the vitiligo patch (Figure 2, Figure 3). This is called NEEDLING. These shifted melanocytes are exposed to EXCIMER which induces melanogenesis (Figure 1a).



Figure 2

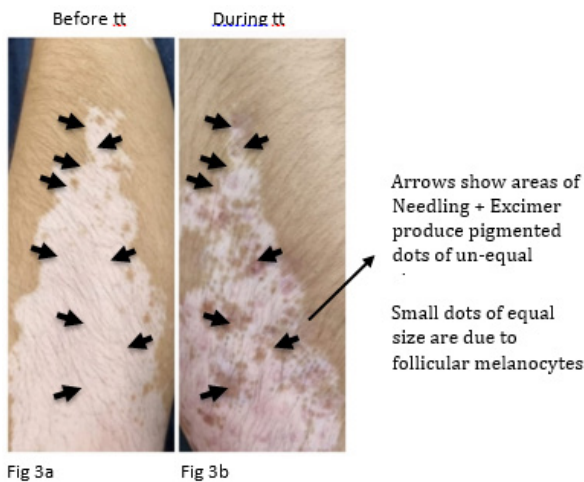


Figure 3

We do multiple needle pushes through the edge of vitiligo patch at 10 to 15 mm apart.

In this study we did EXCIMER 2-3 times per week with increasing fluence, and NEEDLING once a week.

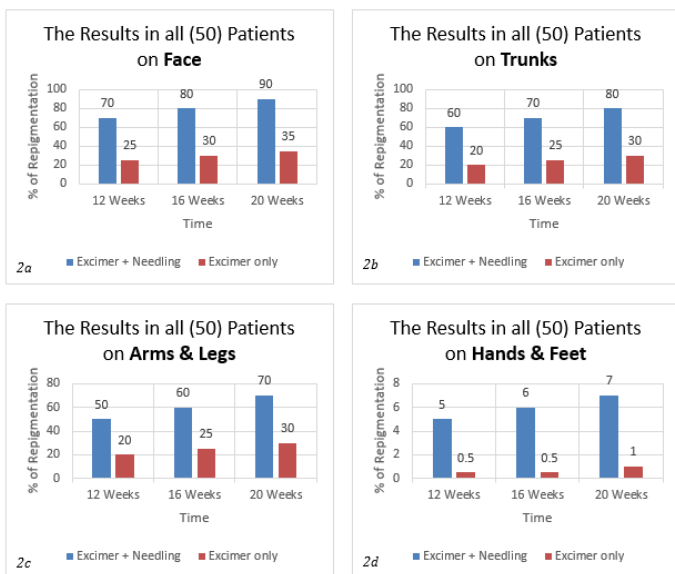
The role of needling is obvious in Figure 2a and Figure 2b. It shows that EXCIMER light is targeting the whole Vitiligo patch but the start of re-pigmentation (as new dots) is at the periphery of vitiligo patch where needling is done (shown by arrows).

The area in the square box was treated by EXCIMER only and so had minimal re-pigmentation. This confirms the role of needling. These new dots of re-pigmentation are very potential and needling is done through these dots to spread pigmentation further in to the center of patch.

Figure 2c shows that re-pigmentation is almost 90% after 12 sessions of needling and 24 sessions of excimer.

Figure 3a and Figure 3b of arms shows maximum activity of repigmentation at the edges where needling is done. This justifies the role of needling as an important adjunct in this combination treatment of vitiligo. In this figure some repigmentation from follicular melanocytes is also evident as very small dots of equal size with slow progress but with our combination treatment the repigmentation dots are growing fast and of different sizes.^{15,16,17}

Results (Graph 2)



Graphs 2a, 2b, 2c, 2d clearly shows that combination of NEEDLING+ EXCIMER is 3 times more effective for vitiligo than EXCIMER alone.

We suggested criteria to monitor the results as following:

Percentage of re-pigmentation (Measured according to number and sizes of patches)

Versus

- I. Parts of body
- II. Time in weeks
- III. Excimer with needling and excimer alone. (Graph 2)

Graphs 2a, 2b, 2c, 2d clearly shows that combination of NEEDLING+ EXCIMER is 3 times more effective for vitiligo than EXCIMER alone.

Results are always best on the face (Figure 4-6).



Figure 4 Before tt and after 8 Sessions of needling and 24 sessions of Excimer.



Figure 5 Before tt and After 6 sessions of Needling and 18 sessions of Excimer.

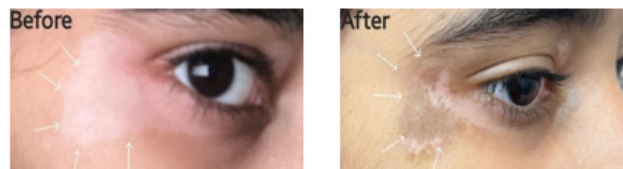
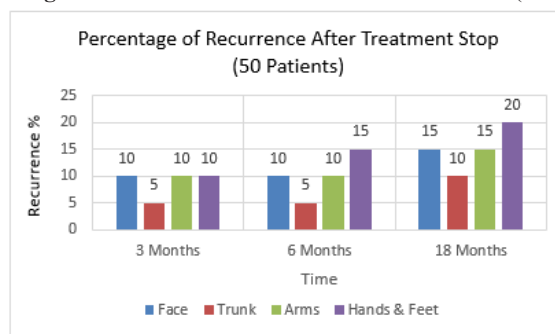


Figure 6

Post treatment follow up was done to note the reversal of repigmentation.

Percentage of Reverse or Recurrence after Treatment: (Graph 3)



Graph 3 Shows that chance of depigmentation of treated patches are 10% to 20% in a year and increases with time.

Conclusion and discussion

The above results and graphics prove that our Alhamd treatment of excimer + needling is very effective with remarkable re-pigmentation against vitiligo as compared to excimer alone. Because melanocytes are mostly absent in Vitiligo so exposure to excimer alone is less effective as the target of excimer i.e. melanocyte is missing. Needling is a very useful adjunct with excimer that helps by shifting melanocytes in to the Vitiligo patch to produce a target for excimer.

Re-pigmentation mainly depends upon the area under treatment. Best results are on face and slower towards peripheral parts.

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Conflicts of interest

Authors declare there is no conflict of interest.

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