

TITLE: Efficacy of Microneedling with 35% Glycolic Acid Peel Versus Fractional Erbium:YAG Laser with 15% Trichloroacetic Acid Peel in the Treatment of Atrophic Acne Scars: A comparative interventional study.

Presenting Author: DR AAKANKSHA ARORA, KCGMC

Conflict of interest : NIL

Introduction

Atrophic acne scars are a common dermatological concern that significantly impact patients' quality of life. Combination therapies involving microneedling, chemical peels, and fractional lasers have gained popularity due to their synergistic effects on scar remodeling and skin rejuvenation.

Aim and objective:

To compare the efficacy and safety of microneedling followed by 35% glycolic acid (GA) peel versus fractional Erbium:YAG laser followed by 15% trichloroacetic acid (TCA) peel in the management of facial atrophic acne scars.

Methods

- Prospective hospital based comparative interventional study
- Inclusion criteria included patients aged between 18 to 45 years of age who had grade 2, 3 or 4 acne scars according to goodman and barons grading
- Exclusion criteria were patients with active cutaneous infections like herpes simplex or warts, active acne at the time of presentation, patients who were on oral retinoids or who had taken the same in the past 6 months, patients with bleeding tendencies, patients with keloidal tendency, pregnant or lactating females.
- A total of 50 patients with atrophic acne scars were enrolled and randomly assigned into two groups (n=25 each).
- Group A treated with 4 sessions of microneedling followed by 35% GA peel repeated every 28 days
- Group B treated with 4 session of fractional Erbium:YAG laser treatment followed by 15% TCA peel, repeated every 28 days.
- Improvement was assessed using Goodman and Baron's qualitative and quantitative global acne scar grading systems and patient-reported outcomes via Visual Analogue Scale (VAS) for scar improvement.

- The improvement were rated as:
- Excellent: Improvement by two or more grades
- Good: Improvement by one grade
- Poor: No upgradation on assessment

Results

- The mean age of patients in group A was 24.65±6.23 years and in group B was 25.54±5.32 years.
- In group A, 56% patients were males and 44% patients were females. In group B, 52% patients were males and 48% patients were females.
- The mean percentage reduction in Goodman and Baron's quantitative acne scar scores was significantly more in Group B (20.56% ± 6.90%) compared to group A (22.02% ± 8.2%) (p<0.05).
- In our study, 25% cases and 35% cases showed excellent response i.e., reduction in acne scars by two grades from baseline in group A and B respectively while 45% and 55% cases showed good response i.e. reduction in acne scars by one grade from baseline in group A and B
- Thus, at the end of the therapy improvement in Goodman and Baron's qualitative acne scar grades between group A and group B was statistically significant (p value < 0.05).
- In regards of complications, both procedures were well tolerated with few cases of minor post inflammatory hyperpigmentation in Group B. The most common adverse effect was erythema in group A and group B with 30% and 55% cases
- In VAS, the results were comparable in both the groups (p>0.05).

Image A: Pre and post procedure photo in group a (Microneedling with 35% Glycolic acid peel)



Image B: Pre and post procedure photo in group b (Er YAG laser with 15% TCA peel)



Conclusions

Both combination therapies—microneedling with glycolic acid and fractional Erbium:YAG laser with TCA—are effective and safe for treating atrophic acne scars. While overall efficacy was comparable, Erbium YAG laser-TCA combination showed marginally superior results but microneedling with GA has better safety profile.

References:

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