

Efficacy of a combination approach using subcision, fillers, and fractional carbon dioxide laser for the treatment of facial acne scars in Fitzpatrick skin types IV–VI

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Acne scars is a persistent dermatological problem in which any one treatment modality is not completely effective, and hence a combination of therapeutic modalities is required for the treatment.

Inclusion Criteria:

- Patients with Fitzpatrick IV–VI skin types
- Grades 2–4 atrophic acne scars

Exclusion Criteria:

- Patients taking isotretinoin (or having taken any time in the past 6 months)
- Patients having active acne or keloidal tendency or a history of herpes labialis

Study Design

- Prospective clinical study - carried out from February 2015 to July 2017.
- One hundred sixty-five patients (90 females and 75 males) in the age range of 20–45 years with acne scars (Grades 2–4), as per Goodman and Baron Acne Grading Scale were enrolled in the study.

Demographic data of the patients for the study

Participants distribution, N = 165

Gender	Age range (years)	N%	Age, Mean \pm SD	BMI, Mean \pm SD
Female	20-45	90 (54.54%)	28.4 \pm 1.25	21.69. \pm 2.19
Male	20-45	75 (45.46%)	30.76 \pm 2.36	23.7 \pm 1.64

METHODOLOGY

Subcision performed at the dermal-subcutaneous junction, using a 26 gauge needle under topical anaesthesia

Rationale:

Subcision breaks the connection between the superficial and the deeper tissues, and subsequently lifts the scar, during the normal course of wound healing

Hyaluronic acid filler injected under each marked pitted scar

Rationale:

Hyaluronic acid fillers (HAF) are injected at the same sitting to further raise the scar and avoid the reattachment of the fibrous strands back to the deeper tissues.

Fractional carbon dioxide laser performed

Rationale:

Fractional CO2 works on the principle of ablation and causes immediate collagen formation, subsequent remodelling, ultimately leading to the improvement in the quality of the skin.

Evaluated at Day 2, 7 and 14, thereafter at 6 weeks and 6 months after the first laser procedure

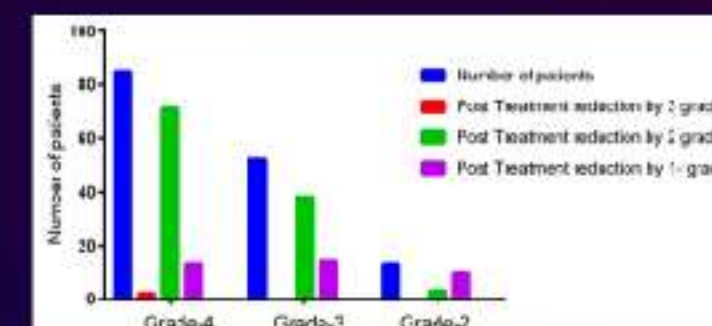
FOLLOW UP PERIOD:

6 months after the last laser session

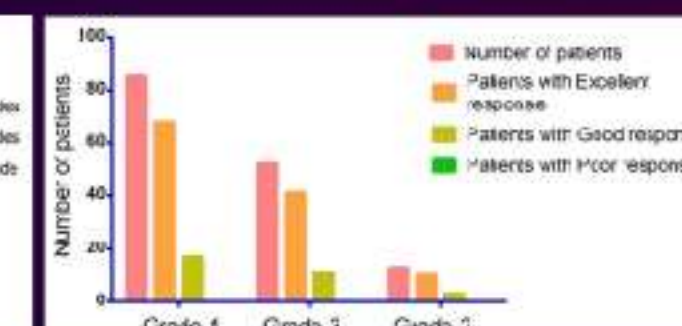
Results:

Objective improvement in grading of acne scars assessed by the clinician

GRADE OF ACNE SCAR	POST-TREATMENT REDUCTION (no. of patients)		
	BY GRADE 3	BY GRADE 2	BY GRADE 1
GRADE 4	2	70	13
GRADE 3	0	40	12
GRADE 4	0	3	10



Objective improvement in grading of acne scars assessed by the clinician



Subjective improvement in the grading of acne scars as assessed by patients

Complications:

- No serious side effects were seen during the course treatments except for erythema, edema, oozing, and crusting, which was seen in almost all patients, after each fractional carbon dioxide laser session.
- Transient post-inflammatory hyperpigmentation (PIH) was seen in 7 patients.
- No adverse events like infection, hypopigmentation, or worsening of scars were seen in any patient.

Conclusion:

The results show that combination approach to the treatment of facial acne scars using subcision, fillers, and fractional carbon dioxide laser show significant and persistent improvement, without considerable complications, in Fitzpatrick's skin types IV–VI.



Before

Before and after procedure image which showed improvement from Grade 4 acne to Grade 2



After



Before

Before and after procedure image which showed improvement from Grade 4 acne to Grade 2



After