



AESTHETIC AND COSMETIC DERMATOLOGY (LASERS SEPARATE CATEGORY)

A NOVEL STEREOSCOPIC OPTICAL SYSTEM FOR OBJECTIVELY MEASURING ABOVE SURFACE SCAR VOLUME - FIRST-TIME QUANTIFICATION OF RESPONSES TO VARIOUS TREATMENT MODALITIES.

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BACKGROUND: Current approaches use subjective semi-quantitative or cumbersome objective methodologies to assess physical characteristics of hypertrophic and keloid scars.

OBJECTIVE: This pilot study aimed to evaluate the accuracy and feasibility of a new stereoscopic optical and high-resolution three-dimensional (3D) imaging system, for objectively measuring changes in above surface scar volume following various interventions.

METHODS: Feasibility of the system was assessed by monitoring the above surface scar volume of five scars in two patients for five successive months. Above surface scar volume and Vancouver Scar Scale (VSS) scores and the investigator and patient volume improvement assessment scores were assessed before and twelve weeks after last intervention.

MAIN OUTCOME MEASURE: Feasibility and accuracy of an objective scar assessment system.

RESULTS: Scar volume measured by the imaging system correlated significantly with the gold standard (actual weight). The greatest volume reduction followed a combination of cryotherapy and intralesional triamcinolone acetonide and 5-fluorouracil injections in Patient 1, and a combination of pulse dye laser and intralesional triamcinolone acetonide injections in Patient 2.

CONCLUSION: The new stereoscopic optical system is a valid, accurate and practical objective method for assessing scar volume and for monitoring treatment response. It is more sensitive and accurate than semi-quantitative objective scales. Further studies with a





higher number of patients and scars are required to increase the measurement validity of the system.

