

Multi-modality approaches with exosomes for hard-to-treat acne scars: My approach

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This abstract discusses the potential benefits of exosomes as an adjuvant therapy with standard first-line energy-based treatments for severe acne scar remodeling. Atrophic acne scars with severe underlying fibrosis can be very challenging to treat, especially in the forehead, and temple areas, and is even harder in darker skin types. Exosomes, are small lipid bi-layered nanovesicles loaded with growth factors, nucleotides, proteins, and lipids that have shown promising improvement in wound healing, scar remodeling can offer synergistic benefits in the optimal correction of acne scars.

Acne scars are the most common troublesome chronic inflammatory skin condition that leads to scarring and hyperpigmentation. Post-acne sequelae can have a significant impact on a person's self-esteem and quality of life. While traditional treatments such as peels, microdermabrasion, dermabrasion, subcision, laser therapy, and RF micro needling have shown some success in improving the appearance of acne scars, there is a growing interest in the use of exosomes as adjuvant therapy for these treatments. Exosomes offer excellent anti-inflammatory benefits in the treatment of acne scar revision.

We reviewed acne scar patients who received exosome and EBD combo therapy for 3 years from 2020 to 2023. These patients had all types of acne scars with various stages, depth, fibrosis, with or without erythema and hyperpigmentation. This was a 3 step procedure. All of them had subcision for rolling acne scars, followed by FRF or 1550 or both then had topical application of exosomes. Finally LLLT was used to enhance the absorption of exosomes.

Our patients noticed a visible improvement in the quality of skin after two sessions of exosomes combo treatment with EBD and subcision. They had a significant reduction of both acne breakouts, reduction of acne-induced erythema, and acne-induced hyperpigmentation without the use of vascular lasers or PICO lasers. My patients reported high levels of satisfaction with the brightening effect and smoothness with fewer sessions. Almost all of them had shorter recovery time, no side effects such as post laser PIE and PIH.

Exosomes offer a powerful anti-inflammatory & regenerative benefit that can synergistically work with energy-based treatments in patients with difficult or severe acne scarring. The exosomes reducing chronic inflammation, their effect on all 4 phases of wound healing, and reduction of erythema and pigmentation can be great adjuvant therapy for both the prevention and treatment of acne scars. The cell-free Exosomes adjuvant therapy with EBDs can further benefit in preventing and treating acne scars, especially in high-risk SOC patients and severe acne scars with erythema and pigmentation.