

The Lip Exo-S technique: Synergistic bioregenerative lip boosting with PDRN, Exosomes, HA Skin Boosters, and a Hyaluronic Acid Rejuvenating complex

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Abstract

Objective: The purpose of this study is to assess the effects of injecting the lips with a mixture of polydeoxyribonucleotide (PDRN), non-cross linked hyaluronic acid (HA) skin booster, exosomes and a hyaluronic acid rejuvenation complex to increase lip hydration, elasticity and rejuvenation in Middle Eastern patients.

Methods: Thirty female Middle Eastern patients who sought a lip rejuvenation treatment at our clinic were included in the study. Using a micro cannula, a single syringe containing a combination of PDRN, non-cross linked HA skin booster, exosomes and a hyaluronic acid rejuvenation complex was injected in the lips of each patient. Statistical analysis was performed to evaluate the patient satisfaction score prior to and after the injection procedure through different intervals.

Results: All patients reported a significant improvement in satisfaction immediately after the injection despite the moderate swelling; they also noted an improvement in lip texture, elasticity along with a decrease in the depth of the fissures in addition to a visible enhancement in lip color due to reduced pigmentation.

Conclusion: For lip boosting, a combination of PDRN, non-cross linked HA skin booster, exosomes and a hyaluronic acid rejuvenating complex can improve the quality of the lip tissue without adding volume, giving the lips a smoother texture. For lip hydration purposes, this hybrid approach yields better outcomes than the use of each product alone, which was described in our previous studies.

Keyword: Exosomes; Polynucleotide; Polydeoxyribonucleotide; Hyaluronic acid; Lip boosting; Skin boosters; Regenerative medicine; Aesthetic medicine; Functional medicine; Biostimulators.

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Introduction

The evolving field of aesthetic medicine is shifting towards functional aesthetics, focusing on cellular-level enhancements rather than mere volumization. While neurotoxins and fillers have been traditional methods, newer biostimulatory agents such as PDRN, exosomes, and non-cross-linked HA have emerged as promising alternatives.¹⁻⁴

PDRNs are derived from germinal cells of sea creatures,⁵ it acts on providing a tissue remodeling effect. Several researchers have found out that it promote the formation of fibroblast cells,⁶ angiogenesis⁷ and wound healing.⁸ On the other hand exosomes are extracellular vesicles that contain a core of micro RNA, messenger RNA, transcription factors, membrane trafficking proteins, antigen presenting proteins and other peptides enclosed in a bilayer lipid membrane. To date exosomes have been used in stem cell maintenance, as adjuncts in drug delivery and wound healing.⁹ Recently exosomes have gained particular interest as a topical and injectable solution due to their regenerative properties despite the fact that

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it appears as a promising product yet published studies remain limited.¹⁰ Furthermore non-cross linked hyaluronic acid skin booster provides rejuvenation through collagen formation and improvement of the skin surface roughness thus it acts as a skin booster.

None of the published articles to this date, mentioned the combined use of exosomes, PDRN and non-cross linked hyaluronic acid for lip rejuvenation so the aim of this study is to propose a novel technique for lip boosting using a hybrid technique.

Material and Methods

Thirty Middle Eastern female patients with an age range (23-35 years old) were included in the study who came to our private practice seeking lip boosting treatment. Written informed consent was obtained from all patients explaining the benefits as well as the potential complications out of this procedure. Patient satisfaction score was obtained from all patients during the following periods; baseline (before the procedure), 14 days after the procedure, 1 month and at 3 months after the treatment. The satisfaction score was based on a scale from 1 to 5, where 1 means not satisfied, 2 means less satisfied, 3 means quite satisfied, 4 means satisfied and 5 means very satisfied.¹¹

The following are the products used in this study:

Nucleospire® (PDRN from trout DNA).

Elysee Exosome PDRN Ampoule® (synthetic plant-based exosomes and PDRN).

Cellbooster Lift® (sodium hyaluronate, amino acids and vitamins).

RRS® Hyalift® 75 PROactive (non-cross-linked HA with antioxidants and amino acids).

All the patients were injected with a mixture of 1 ml of polydeoxyribonucleotide (NucleoSpire®, Mesopharm CO., LTD, South Korea), 1 ml of non-cross linked hyaluronic acid (RRS® Hyalift® 75 PROactive syringe, Skin Tech Pharma Group, Spain), 0.1 ml of synthetic plant based exosomes (Elysee Exosome PDRN

Ampoule®, DermaFirm, South Korea) and 0.1 ml of a hyaluronic acid rejuvenating complex (Cellbooster Lift®, Suisselle SA, Switzerland). All components were mixed in a single syringe using a luer lock adaptor, eventually a single syringe of 2.2 ml containing the whole mixture was injected using a 23 G 30 mm Softfil cannula® (Soft Medical Aesthetics, Paris, France). Dosages were determined based on prior clinical experience with dehydrated lips and have not been previously described in literature.

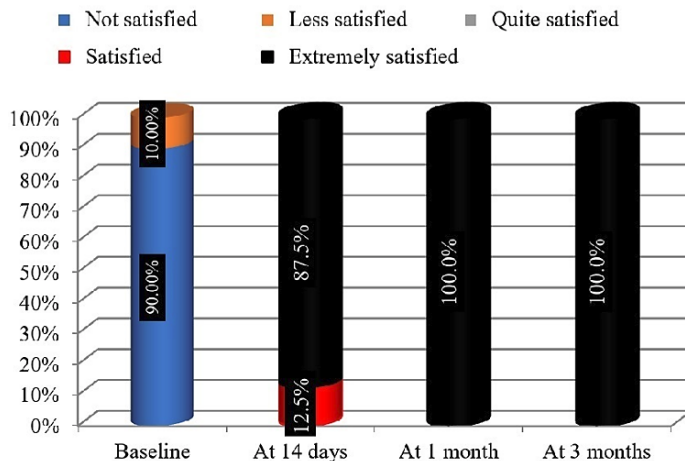
Only one corner of the mouth was utilized to make a single point of entry to inject both the upper and lower lip where the cannula was advanced from one entry point to the red part of the lip and advancing the cannula through the midline to the other side of the lip. An entry point was made 1 cm from the corner of the mouth with a pilot needle followed by advancing the cannula in an oblique direction in a superficial plane heading toward the red part of the lip, microboluses were administered in each lip compartment followed by a series of retrograde and anterograde linear injections (**Figure 1**).



Figure 1 Artificial intelligence (AI) generated image illustrating the lip-boosting injection technique using a combination of PDRN, exosomes, HA rejuvenating complex, and HA skin booster. The black dot marks the entry point. The upper arrow indicates the injection direction for the upper lip, while the lower arrow shows the injection path for the lower lip, both performed from the same entry point. Proper handling of the lip tissues and cannula allows for effective treatment of both lips with a single entry without the need to create two entry points.

Table 1 Demographic data for the patients.

| Demographic values | Total (n=30) |
|--------------------|--------------|
| Sex | |
| Female | 30 (100.0%) |
| Age (years) | |
| Range | 23-a35 |
| Mean±SD | 29±3.00 |

**Figure 2** Comparison between different time intervals based on the satisfaction score.

Following the injection procedure, the lips were gently massaged.

All patients were instructed to avoid the following; physical activities for the first 24 hours, opening their mouth widely, having a dental procedure, kissing and smoking for 72 hours. No medications were prescribed for any of the patients.

Statistical analysis The recorded satisfaction score data were analyzed using SPSS version 23.0 (SPSS Inc., Chicago, Illinois, USA). The data were presented as mean, standard deviation and ranges. Also qualitative variables were presented as number and percentages. The following tests were performed; Cochran's Q test, Pearson's correlation.

Results

No side effects from this procedure have been reported by any of the patients except for a moderate swelling immediately after the procedure that lasted for two days only. Patients in this trial expressed a high level of satisfaction, and they also reported improvements in lip texture, a reduction in the depth of fissures, and a

hypopigmentation impact that they defined as an intensification of the lips' red color (**Table 1; Figures 2-4**).

Discussion

Regenerative and functional medicine is the new era in aesthetic medicine where both medical practitioners and patients are accepting the idea of injecting products that help in tissue repair and remodeling. There are many products on the market that work on enhancing the skin quality those of which includes; exosomes,^{9,10} polydeoxyribonucleotides⁸ and non-cross linked hyaluronic acid.⁵

This study aimed to determine the efficacy of a multi-product technique for lip rejuvenation. Prior research on PDRN, exosomes, and HA has focused on their individual benefits; however, this is the first study to assess their combined effects. While each component contributes distinct regenerative properties, the synergy between them may provide superior outcomes compared to single-agent use.

**Figure 3** A) Before the injection; B): Immediately after the injection (Note the moderate swelling because of the injection procedure).



Figure 4 A) Before the injection; B) Postoperative (the swelling and volumization effect have disappeared but only maintaining the hydration effect).

One of the interesting observations that we noticed on the follow up sessions is the hypopigmentation effect achieved out of the treatment where the patients stated that the red colour of their lips was enhanced with a decrease in the discoloration and pigmentation. We strongly stress on a point that in our clinical practice no solid evidence was found to support significant differences between needle and cannula results; however, cannulas were preferred for safety and reduced trauma. Since the products used in this study work on different cell layers, we highly encourage other studies to be conducted on the same technique where we advocate evaluating the effect of injecting a mixture of PDRN & non-cross linked HA in addition to the topical use of exosomes and the stabilized rejuvenating complex with micro needling for lip rejuvenation.

Although the results of this study were promising, it is important to acknowledge certain methodological limitations. The study design did not include control groups receiving individual components separately, making it difficult to determine the exact contribution of each product. Future research should incorporate comparative trials to evaluate the independent effects of each ingredient and validate their combined efficacy. Additionally, while the use of a microcannula technique provided a safe and minimally invasive delivery method, further investigations comparing

cannula and needle-based injection techniques could offer insights into optimizing application strategies. Another important consideration is the regulatory landscape surrounding PDRN and exosome-based treatments. These products are not yet widely approved in all countries, and their safety and efficacy remain under scrutiny in certain regions. Conducting multicenter studies across different regulatory environments will be essential for establishing standardized protocols and ensuring global accessibility.

Despite these limitations, the results of this study align with existing literature that highlights the benefits of biostimulatory agents in aesthetic medicine. HA-based skin boosters are well-recognized for their hydrating properties, while PDRN and exosomes contribute to long-term regenerative effects.¹²⁻¹⁷ The observed improvements in lip texture, hydration, and color enhancement suggest that a multi-product approach may provide a more holistic and long-lasting outcome than monotherapy. However, additional studies with larger sample sizes and extended follow-up periods are necessary to validate these findings.

Conclusion

The technique described in this study may offer promising results for patients seeking lip boosting treatment, moreover this hybrid technique of mixing four different products seems to provide a synergistic effect on the lips. While this study presents a novel approach, the lack of a control group and a small sample size are limitations. Future trials should compare this hybrid technique to monotherapy treatments and assess long-term effects over extended follow-up periods.

The present research presents an innovative approach that could be utilized as a therapeutic approach to treat dry dehydrated lips without giving any volumization, it also could show a future potential uses for exosomes, PDRN as well as skin boosters injection for providing rejuvenation and youthful look.

Declaration of patient consent The author certify that he has obtained all appropriate patient consent.

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Conflict of interest Author declared no conflict of interest.

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