Clinical Case Reports International

Case Series
Published: 29 Oct, 2026

Dermal Remodeling and Global Skin Quality Enhancement Following Treatment with PLLA-LASYNPRO™ (Julaine™): A 6-Month Retrospective Observational Case Series

Pereira Forjaz D*

Clínica Forjaz, Lisbon, Portugal

Abstract

Objective: To describe the effectiveness and tolerability of the Poly-L-Lactic Acid (PLLA) collagen stimulator PLLA-LASYNPRO™ in women with moderate-to-severe facial skin aging.

Methods: A retrospective observational case series study was conducted based on the medical records of patients who had received treatment with PLLA-LASYNPRO™ at a private aesthetic clinical practice. Each patient had received 3 treatment sessions at 5-week intervals using either a full-face or targeted nasolabial approach. Clinical assessment and standardized photography were performed at baseline and during the 6 months of follow-up. Patient-reported observations including perceived changes in skin hydration, elasticity, smoothness, and radiance were recorded during routine clinical assessment.

Results: Ten female patients (aged 48-63 years) were included in this case series. Five patients received full-face treatment, while five were treated in the nasolabial region. In all patients, clinical and photographic assessments showed apparent changes in overall skin appearance, including improvements in the appearance of skin texture, firmness, hydration, elasticity, and radiance. Changes appeared progressive over the treatment and 6-month follow-up period. Adverse effects were transient and limited to mild erythema and edema.

Conclusion: In this small retrospective case series, PLLA-LASYNPRO™ was associated with favorable clinical and photographic changes in skin appearance and was well tolerated.

Keywords: Aesthetic, Biostimulation; Collagen; Juläine™; PLLA; Regeneration; Skin rejuvenation

OPEN ACCESS

Correspondence:
Pereira Forjaz D, Clínica Forjaz, Av. Eng. Duarte Pacheco - Centro Comercial Amoreiras, Torre 1, Sala 404, 1070-101 Lisboa, Portugal, E-mail: forjaz.diogo@gmail.com

Received Date: *03 Oct 2026*
Accepted Date: *27 Oct 2026*
Published Date: *29 Oct 2026*

Citation:
Pereira Forjaz D. Dermal Remodeling and Global Skin Quality Enhancement Following Treatment with PLLA-LASYNPRO™ (Julaine™): A 6-Month Retrospective Observational Case Series. Clin Case Rep Int. 2026; 10: 1798.

Copyright *© 2026 Pereira Forjaz D. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

Introduction

Facial skin aging is a multifactorial process driven by intrinsic biological aging and extrinsic environmental factors, leading to progressive deterioration of skin structure and function [1]. Clinically, this manifests as loss of dermal thickness and elasticity, reduced collagen content, skin laxity, fine lines and wrinkles, diminished hydration, uneven texture, and decreased radiance [2]. At a histological level, these changes are largely attributable to quantitative and qualitative alterations in collagen, particularly type I collagen, which is essential for maintaining skin firmness, tensile strength, and structural integrity [1].

Patients increasingly seek interventions that rejuvenate the skin biologically rather than relying solely on volumization or wrinkle filling [3]. As a result, strategies aimed at stimulating fibroblasts to trigger natural collagen synthesis and repair mechanisms play an important role in contemporary aesthetic medicine practices [4,5].

Poly-L-Lactic Acid (PLLA) is a well-established collagen stimulator with a long history of use in aesthetic medicine. Injection of the PLLA particles triggers macrophage-mediated tissue regeneration and sustained collagen synthesis, predominantly type I collagen, resulting in progressive improvements in skin firmness, texture, and elasticity [6,7]. PLLA-LASYNPRO™ (Juläine™, Nordberg Medical AB, Sweden) has been designed with smooth and homogeneous microspheres to trigger neocollagenesis with minimal immune activation [7,8].

Preliminary clinical and biochemical data indicate that PLLA-LASYNPRO™ effectively

stimulates collagen production and leads to improvements in skin texture, firmness, and elasticity while reducing wrinkle severity [9-11]. The aim of this retrospective, observational case series was to evaluate the clinical performance, safety, and patient-reported outcomes of PLLA-LASYNPRO™ in women presenting with moderate-to-severe facial skin aging treated in routine clinical practice.

Materials and Methods

This retrospective observational case series was based on the medical records of patients who had received treatment with the collagen biostimulator PLLA-LASYNPRO™ (Juläine™, Nordberg Medical AB, Sweden) at a private aesthetic clinical practice in Lisbon, Portugal. All patients presented with visible signs of moderate-to-severe skin aging such as skin laxity, hydration deficits, diminished skin radiance, wrinkles, loss of skin thickness and firmness. All exhibited features consistent with intrinsic and extrinsic aging, supporting a treatment indication aimed at facial rejuvenation and improving skin quality.

None of the patients had received facial aesthetic treatments in the past 12 months. Exclusion criteria for facial injectable procedures applied, namely active dermatological conditions or skin infections, autoimmune or bleeding disorders, history of severe allergies, previous permanent fillers in treatment areas, known hypersensitivity to any component of the product, and pregnancy or breastfeeding.

As part of routine clinical practice, a visual examination of skin condition was performed including assessment of skin texture (pores, lines, wrinkles), tone (pigmentation, dullness), laxity (skin pinch test), and hydration. All patients in this case series underwent either a full-face treatment (temporal area, mid face and lower face) or targeted nasolabial fold treatment. Both involved 3 treatment sessions performed 5 weeks apart. All treatments and assessments were performed by a single physician (DPF).

In each session, patients were treated with 1 vial of PLLA-LASYNPRO™ (150 mg) reconstituted using 5 mL of sterile physiological balanced saline solution for injection, in accordance with the Instructions for Use (IFU) [12]. One reconstituted vial of PLLA-LASYNPRO™ is generally sufficient to treat both sides of the face with a full-face approach. Injections were performed with a 25 G/50 mm blunt cannula using a retrograde fanning technique (up to 5 lines with a volume of approximately 0.2-0.3 mL per line depending on the treated zone) (Figure 1). Product was delivered into the subdermal plane to achieve an even tissue distribution, after which the area was massaged. The same procedure was repeated at each treatment session. Juläine™ is CE-marked for shallow to deep nasolabial fold correction only. All other anatomical areas described in this report represent off-label use. This report documents an independent clinical observation and does not constitute guidance, recommendation, or endorsement for expanded-area administration.

Photographic and clinical assessments were carried out at the following time points: V0 (baseline): before the first treatment; V1 (Week 5): before the second treatment; V2 (Week 10): before the third treatment; V3 (Week 15): 4 months after the first treatment; and V4 (Week 24): 6 months after the first treatment. Standardized 2D and 3D photographs were obtained at each visit using the Quantificare LifeViz® 3D imaging system under identical conditions (lighting, camera distance, angle, and camera settings) and without makeup. These images were used to document changes in treatment outcomes over time. Patient-reported observations regarding perceived improvements in skin hydration, elasticity, smoothness, and radiance were recorded at follow-up visits. No formal, validated, or standardized patient-reported outcome questionnaire was administered; these observations were obtained during routine clinical assessment and documented in the clinical record.

Safety was assessed at each treatment and follow-up visit. Patients were specifically questioned regarding the occurrence of any local or systemic adverse events since the previous visit, including pain, erythema, swelling, bruising, tenderness, nodules, induration, or other treatment-related symptoms. The treating physician also performed a clinical examination of the treated area to identify any visible or palpable treatment-related events. All adverse events reported by the patient or identified clinically were documented in the clinical record, together with any treatment or management provided. Monitoring continued throughout the 6-month follow-up period.

All procedures performed were in accordance with the principles of the Declaration of Helsinki and the International Conference on Harmonization Good Clinical Practice guidelines. All patients were informed about the product and procedure and signed an informed consent form for their anonymized clinical data to be used for future training and scientific purposes.

Results

Ten women with a mean age of 54.3 years (48-63 years) were included in the case series. All received 3 treatment sessions over the period April to June 2025 and had complete medical records for up to 6 months. At baseline, all participants presented with moderate-to-severe visible signs of facial aging including skin laxity, loss of firmness, reduced skin quality and lack of radiance. Most patients reported a fatigued facial appearance and expressed dissatisfaction with their skin condition. Five patients who presented with diffuse signs of skin aging across the lower, mid and upper face underwent a full-face treatment and received PLLA-LASYNPRO™ 2.5 ml/side at each injection session. Five patients showed predominantly localized aging in the nasolabial region and received targeted treatment in this area with 1.5 ml/side at each injection session. All patients attended their 4-month follow-up visit and 9 out of 10 patients attended a 6-month visit.

Across all 10 patients, treatment with PLLA-LASYNPRO™ was associated with progressive clinical and photographic changes in skin appearance over the course of the 3 treatment sessions. Observed changes included a smoother cutaneous surface, with improvements in the appearance of lines and wrinkles as well as skin firmness and hydration. Skin tone took on a more uniform appearance with increased radiance. Representative photographic series from baseline (day 0, before treatment) through to the 4-month follow-up visit are shown in Figure 2 for a patient treated with the full-face approach and in Figure 3 for a patient treated in the nasolabial area.

A partial lifting effect was also observed clinically, which manifested as improved mid-face contour definition in full-face patients, and better support around the nasolabial folds in the patients receiving region-specific treatment. This effect was observed in all patients, but was particularly pronounced in 3 patients.

Patients also reported perceived improvements in skin elasticity and overall skin quality during follow-up. As these observations were recorded during routine clinical assessment rather than using a validated patient-reported outcome measure or standardized



Figure 1: Diagram of the injection protocol for a full-face approach and targeted treatment of the nasolabial folds.



Figure 2: Patient who underwent a full-face approach showing progressive skin improvements from baseline to 4 months follow-up. Images from left to right show: V0 (baseline): before the first treatment; V1 (Week 5): before the second treatment; V2 (Week 10): before the third treatment; and V3 (Week 15): 4-month follow-up.



Figure 3: Patient who underwent treatment of the nasolabial folds showing progressive skin improvements from baseline to 4 months follow-up. Images from left to right show: V0 (baseline): before the first treatment; V1 (Week 5): before the second treatment; V2 (Week 10): before the third treatment; and V3 (Week 15): 4-month follow-up.

questionnaire, they should be considered subjective clinical observations. The observed changes appeared to develop progressively, with more apparent improvements after the second treatment session and further changes following the third session. Improvements continued to progress post-treatment, with greater improvement noted at the 4-month evaluation than at earlier assessments.

Safety monitoring continued for 6 months. Reported or clinically observed adverse events were limited to mild, transient injection-site reactions, comprising mild edema lasting up to 24 h in 7 out of the 10 patients and erythema lasting up to 72 h. No additional treatment-related adverse events were reported by patients or identified by the treating physician during the subsequent follow-up visits.

Discussion

In this retrospective, observational case series of 10 patients, treatment with PLLA-LASYNPRO™ using 3 treatment sessions spaced 5 weeks apart was associated with progressive improvements in the clinical and photographic appearance of the skin. Observed changes included a smoother cutaneous surface, reduced appearance of lines and wrinkles, and apparent improvements in skin firmness, hydration, evenness of skin tone, and radiance. Patients also reported perceived improvements in skin elasticity and overall skin quality. Progressive improvements were documented from the first follow-up visit. These findings support the importance of adopting a structured treatment schedule to optimize results. Physicians are encouraged to perform individualized facial assessments, taking into account regional aging patterns, degree of laxity, and patient expectations, to determine whether full-face or localized treatment is more appropriate. In addition, patients should be informed that maximal results are not immediate, but gradual, and depend on the patient's biological response. However, most patients treated with PLLA-LASYNPRO™ notice results within a few weeks [9,10].

The gradual nature of the observed changes, with continuous improvement noted during follow-up, is consistent with the intended progressive nature of collagen-stimulating treatments [6,13], although the present study cannot establish the timing or magnitude of treatment response. Support for the biostimulatory efficacy of PLLA-LASYNPRO™ has been provided by data from a prospective, open-label clinical study, which reported a significant increase in levels of Procollagen Type I Carboxy-Terminal Propeptide (P1CP), an indicator of type I collagen synthesis, which remained elevated 6 months after PLLA-LASYNPRO™ treatment [9].

The effects of PLLA-LASYNPRO™ treatment were observed in several dimensions of skin appearance including texture, hydration

and elasticity, which have been identified as components of skin quality in a 2021 consensus document [14]. An associated change in skin radiance [15] was also observed, although this was not objectively quantified. Patients reported favorable impressions of their treatment outcomes including perceived improvements in overall appearance, skin radiance, and naturalness of the result, as well as acceptable injection tolerability.

A partial lifting effect was noted in all patients, but was particularly pronounced in 3 patients. This manifested as improved mid-face contour definition after full-face treatment and enhanced support around the nasolabial folds after localized treatment. The lifting property is hypothesized to reflect collagen deposition along vectors of mechanical support. This aligns with previous literature on PLLA-based agents, which has reported enhanced contours and a lifting effect combined with improved skin texture and firmness [16].

Assessing safety with long-lasting biostimulatory fillers is particularly important because their effects persist well beyond the immediate treatment period, and unlike hyaluronic acid fillers are not readily reversable. Inflammatory reactions or nodules may appear weeks or months after injection [17]. A recent study, which evaluated a new PLLA (SY3001-2) for the correction of midfacial volume loss and midface contour defects reported a nodule incidence of 10.2% (17/166) [18]. While most had resolved 6 months after the last injection, long-term surveillance is essential to fully understand a product's safety profile. The follow-up duration in the current case series may have been insufficient to capture late-onset nodules, which can develop many months after treatment. However, no inflammatory reactions or nodules were observed at the 6-month visit. Preclinical data indicate that PLLA-LASYNPRO™ is characterized by well-dispersed microspheres without evidence of aggregation [8]. Such dispersion may theoretically lower the risk of localized product accumulation and subsequent nodule formation.

PLLA-LASYNPRO™ treatment was well tolerated with only mild injection site reactions reported in some patients in the form of transient erythema and edema. In all affected patients these had resolved within 24-72 h, highlighting the favorable safety profile when appropriate patient selection, technique, and product quality are applied. Similar safety findings have been observed in a recent prospective, open-label clinical study [9] and in a survey documenting aesthetic physicians' initial clinical experience with PLLA-LASYNPRO™ [10]. Use of a 25G blunt cannula and fanning technique may have further reduced tissue trauma and minimized procedural discomfort.

In addition to the changes observed in existing skin quality, the findings raise the possibility that collagen-stimulating treatments may have a role in longer-term approaches to the management of age-related skin changes. In this case series, clinical and photographic changes continued to be observed during the post-treatment follow-up period, after completion of the 3 treatment cycles. While this study was not designed to assess the underlying biological mechanisms responsible for these changes, their continued observation during follow-up is consistent with the progressive nature of the response expected with collagen-stimulating treatments. Longer-term prospective studies with objective measures of skin quality and extended follow-up are needed to determine the durability of these changes and whether maintenance treatment provides additional or sustained benefit.

The main limitations of this retrospective observational case series were its small sample size and non-randomized design. In addition, the observations were descriptive and were not assessed using validated clinical scales or standardized patient-reported outcome measures; therefore, the findings should be interpreted as preliminary clinical observations rather than evidence of treatment efficacy. Nevertheless, the consistency of results across all patients strengthens the clinical relevance of the findings. Further prospective studies of PLLA-LASYNPRO™ treatment with large cohorts and objective quantitative measurements of skin quality parameters are now warranted. PLLA-LASYNPRO™ is CE-marked for shallow to deep nasolabial fold correction only. All other anatomical areas described in this report represent off-label use. This report documents an independent clinical observation and does not constitute guidance, recommendation, or endorsement for expanded-area administration.

Conclusion

In this retrospective, observational case series of 10 patients, treatment with PLLA-LASYNPRO™, administered as either a full-face protocol or targeted to the nasolabial folds, was well tolerated and associated with visible improvements in overall skin appearance. Observed changes included improvements in the appearance of skin texture, firmness, hydration, elasticity, and radiance; a partial lifting effect was also noted in some treated areas. Changes remained apparent during the follow-up period after completion of the 3-treatment protocol. Adverse events were mild and transient, consisting primarily of erythema and mild edema. These preliminary observations support additional prospective studies using validated clinical and patient-reported outcome measures, objective assessments of skin quality, and longer follow-up to characterize the efficacy, durability, and safety of PLLA-LASYNPRO™.

References

1. Bar O, Valiukevičienė S. Skin aging and type I collagen: a systematic review of interventions with potential collagen-related effects. Cosmetics. 2025;12(4):129.
2. Humphrey S, Manson Brown S, Cross SJ, Mehta R. Defining skin quality: clinical relevance, terminology, and assessment. Dermatol Surg. 2021;47(7):974-81.
3. Rashid Y, Estela-Fernandez C, Sardar A, Deowan D, Safdar OM, Issimdar IA, et al. Advances in anti-aging procedures: a comprehensive review of surgical and non-surgical rejuvenation techniques. Cureus. 2025;17(9):e92666.
4. Dutra Alves NS, Reigado GR, Santos M, Caldeira IDS, Hernandes HDS, Freitas-Marchi BL, et al. Advances in regenerative medicine-based approaches for skin regeneration and rejuvenation. Front Bioeng Biotechnol. 2025;13:1527854.
5. Haykal D, Haddad A, Cartier H, Avelar L. Poly-L-lactic acid in aesthetic dermatology: a decade beyond volume restoration toward regenerative biostimulation. Aesthet Surg J. 2025;45(10):1065-72.
6. Avelar LE, Nabhani S, Wüst S. Unveiling the Mechanism: Injectable Poly-L-Lactic Acid's Evolving Role-Insights from Recent Studies. J Cosmet Dermatol. 2025;24(1):e16635.
7. Geara J, Luo L, Parlak O, Sommar P, Xu Landén N. Poly-L-lactic acid microspheres promote skin rejuvenation via enhanced fibroblast function. J Biomed Mater Res A. 2025;113(11):e38017.
8. Kubik P, Gruszczynski W, Filipowska M. Comparative analysis of reconstitution and solubility of two poly-L-lactic acid fillers for medical applications. Polymers. 2025;17(13):1778.
9. Urdiales-Gálvez F, Benítez PA, Díaz I. Clinical outcomes of an innovative

poly-L-lactic acid (LASYNPRO) in facial rejuvenation: prospective, multicenter Spanish study. J Cosmet Dermatol. 2026;25(2):e70753.

10. Serrano-Coronado M, Rallo CP, FR Toral, CC Tirado, AR Subirà, VP Ruiz. Clinical perspectives on the safety profile of poly-L-lactic acid (Juläine): results from a national survey. J Cosmet Dermatol. 2025;24(9):e70439.

11. Bertossi D, Camporese A, Kefalas N, Massidda E, Papagni MF, Patalano Ii M, et al. Post-Market Observational Study of Injectable PLLA Microspheres for Facial Rejuvenation. Clin Cosmet Investig Dermatol. 2026;19:589929.

12. Juläine™ Instruction for Use. 2025.

13. Oh S, Lee JH, Kim HM, Batsukh S, Sung MJ, Lim TH, et al. Poly-L-lactic acid fillers improved dermal collagen synthesis by modulating M2 macrophage polarization in aged animal skin. Cells. 2023;12(9):1320.

14. Goldie K, Kerscher M, Fabi SG, Hirano C, Landau M, Lim TS, et al. Skin quality - a holistic 360° view: consensus results. Clin Cosmet Investig Dermatol. 2021;14:643-54.

15. Martschin C, Bahhady R, Li J, Loureiro W, Mansour W, Metelitsa A, et al. Development and validation of a novel holistic skin quality assessment scale. J Cosmet Dermatol. 2025;24(1):e16615.

16. Alcotzer I, Liassidou A, Hexsel D, Tsur Shenhav L, Artzi O. Optimal changes seen in patients after treatment with poly-L-lactic acid: a retrospective descriptive study. Dermatol Surg. 2024;50(1):69-74.

17. Palm M, Mayoral F, Rajani A, Goldman MP, Fabi S, Espinoza L, et al. Chart review presenting safety of injectable PLLA used with alternative reconstitution volume for facial treatments. J Drugs Dermatol. 2021;20:118-122.

18. Zhang Y, Zhang X, Gao X, Wei Y, Qian W, Sun Z, et al. Efficacy and safety of poly-l-lactic acid for correction of midfacial volume loss and contour defects: a prospective, multicenter, randomized, parallel-controlled, evaluator-blinded, superiority trial. J Cosmet Dermatol. 2025;24(7):e70230.