ULTRASONOGRAPHIC OUTCOME OF PATIENTS WITH A POLY-MICRONUTRIENT HYALURONIC ACID INJECTABLE DERMAL IMPLANT

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Background

- Hyaluronic acid is used in dermal fillers as a revitalizing product for improving the skin's conditions. Its low immunogenicity and relative ease of use are specially highlighted.[1]
- Facial rejuvenation is a main indication of this therapy, in order to restore soft tissue loss from aging in a variety of sites including the nasolabial folds, malar fat pads and glabellar lines.[2]
- In the last decades, there has been a remarkable development of different hyaluronic acid gels with different physical properties, which include particle size, crosslinking degree, active molecule concentration, and manufacturing process.[3]
- To reach this goal, gel dermal implants containing hyaluronic acid and poly-micronutrients are increasingly used with a wide range of indications.[4]
- Nevertheless, real-world data about therapeutic outcomes of this strategy are scarce worldwide.

Objective

- To evaluate ultrasonographic outcomes administration of a gel dermal implant containing butanediol diglycidyl ether (BDDE) cross-linked hyaluronic acid (7 mg/ml) in association with a 15 amino acids buffer (14.52 mg/3 ml) and antioxidants in a real-world setting in Argentina.
- To add new, objective evidence to favorable clinical outcomes previously shown with this treatment.

Methods

- Adult patients with skin photoaging and dermal atrophy were considered for treatment with the evaluated gel dermal implant.
- Exclusion criteria were [1] previous hyaluronic acid treatment in the middle and lower thirds of the face; [2] pregnancy; [3] breastfeeding; [4] connective tissue diseases; [5] active or recently diagnosed neoplasms
- A gel dermal implant of 3 ml (21 mg) of BDDE cross-linked hyaluronic acid + amino acid buffer was administrated by highly skilled healthcare professionals, after completing an anamnesis and clinical examination.
- Individual, written informed consents were obtained from all the participants.
- The product was applied in up to 7 specific, optime predefined points with a maximum volume of 0.2 ml with a 30 Gauge needle.
- Data about effectiveness, safety and patients and physician satisfaction were also retrieved for future research.
- Ultrasonographic dermis and hypodermis thickness before and 30 days after performing the implant was estimated with a 30 MHz transductor by a single operator.
- Pre and post values were analyzed with the Wilcoxon test. Missing data were not imputed.

Results

Nineteen participants from two centers were included. Main baseline data are summarized in Table 1.

Table 1 Main participant data

N	19
Female gender	100%
Age, median (interquartile range [IQR])	41 years (33–45)

- Median basal dermis and hypodermis thickness was 0.154 cm (IQR: 0.146–0.327 cm), while median thickness after the hyaluronic acid injectable dermal implant was 0.191 cm (IQR: 0,134-0,187) ($p < 0.01$, Wilcoxon test).

Figure 1. Boxplot describing dermal thickness before and after application of a gel dermal implant with BDDE cross-linked hyaluronic acid + amino acid buffer ($p < 0.01$, Wilcoxon test)

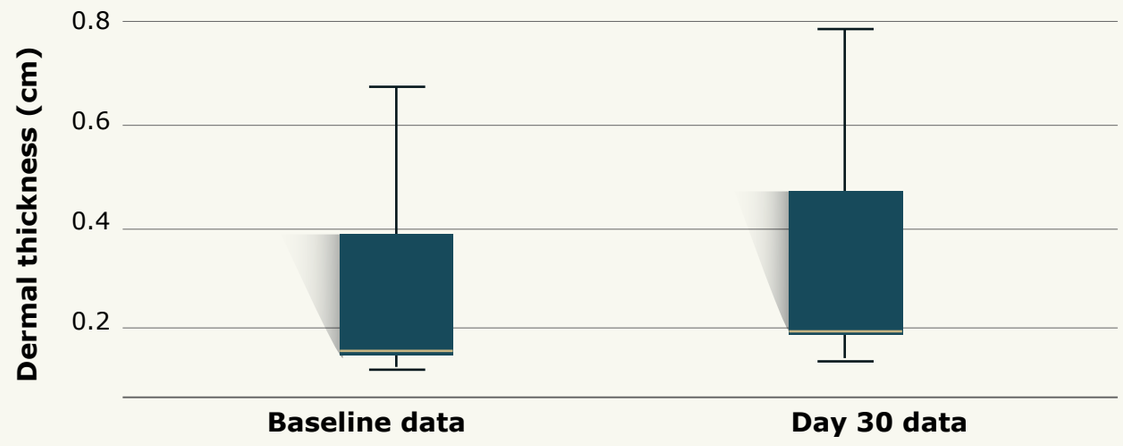
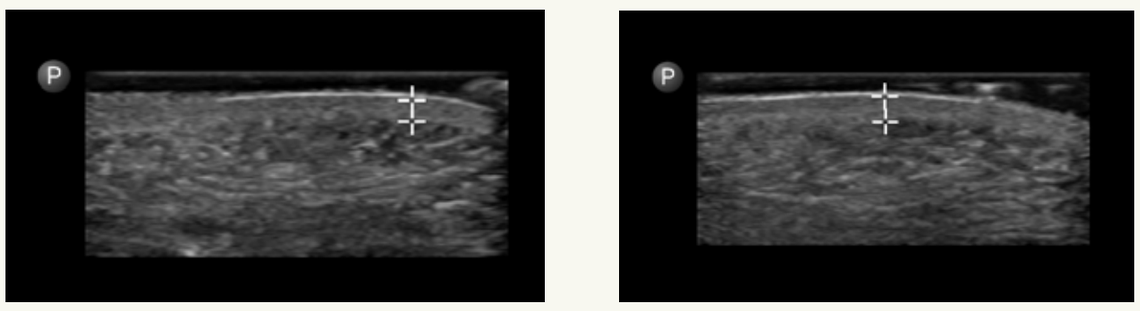


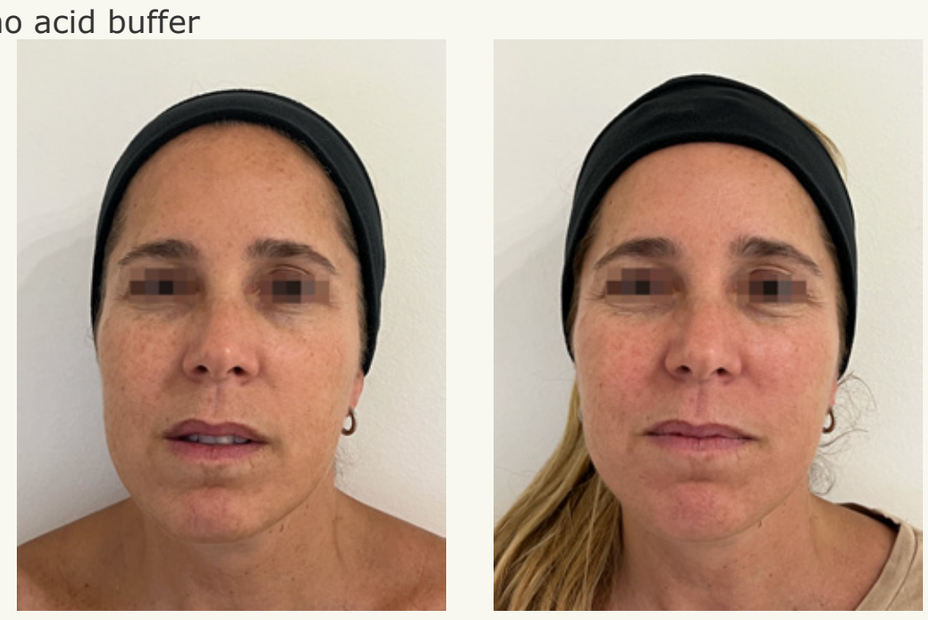
Figure 2. Patient #1 ultrasonography. Left: baseline dermal thickness (0.171 cm). Right: dermal thickness (0,219 cm) evaluated at Day 30 after gel dermal implant with BDDE cross-linked hyaluronic acid + amino acid buffer



- Aesthetic results are shown in Figures 3 and 4.

Figure 3. Patient #2 photographies. Left: baseline Right: Day 30 after gel dermal implant with BDDE cross-linked hyaluronic acid + amino acid buffer

Figure 4. Patient #10 photographies. Left: baseline Right: Day 30 after gel dermal implant with BDDE cross-linked hyaluronic acid + amino acid buffer



- Treatment was well tolerated. Two participants experienced hematomas in the injection site that resolved spontaneously. No discontinuation related to adverse events was reported.

Conclusions

- Facial rejuvenation with a gel dermal implant with BDDE cross-linked hyaluronic acid + amino acid buffer is associated with a significant increase of facial dermal thickness in a real-world setting.
- On this basis, further studies are warranted to add new evidence and confirm these benefits on facial photoaging, by combining the bioestimulation effects of both components and the role of amino acids as substrates for collagenogenesis.[5]

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Conflict of interests: Andrea Rey has been a speaker for L' Óreal and Merz; she is medical advisor for Ceoderma. María José Pelli is a medical advisor for Galderma. Sandra Suttin and Sergio Escobar have no conflict of interests to report.