Juvéderm Vollure™ XC Is Safe and Effective for Long-term Correction of Nasolabial Folds: Results From a Multicenter, Randomized, Controlled Study

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ABSTRACT

Study Objective: To evaluate Juvéderm Vollure™ XC, a hyaluronic acid (HA) gel (17.5 mg/mL) based on the Vycross® technology platform, for long-term correction of moderate to severe nasolabial folds (NLFs).

Design: This was a prospective, randomized, within-subject–controlled study.

Method: Subjects (N=123) received Vollure XC initial/touch-up treatment in 1 NLF and control HA filler in the contralateral NLF. Effectiveness endpoints for Vollure XC included NLF Severity Scale (NLFSS) responder rates (≥1-point improvement vs baseline) through Month 18 after initial/touch-up treatment and at 1 month after optional repeat treatment. Additional effectiveness endpoints included subject-assessed Appraisal of Nasolabial Folds (FACE-Q; 0–100 scale) through Month 18 after initial/touch-up treatment and subject satisfaction on an 11-point scale (0=completely dissatisfied; 10=completely satisfied) through Month 18 after initial/touch-up treatment and at 1 month after repeat treatment. Injection site responses (ISRs) were assessed.

Results: After initial/touchup treatment, Vollure XC responder rates were 93% at Months 1, 3, and 6, 85% at Month 9, decreased to 59% at Month 18, and increased to 94% at 1 month after repeat treatment. Improvement in mean FACE-Q scores over 18 months versus baseline showed continued benefit of Vollure XC from the subject perspective; at Months 3, 6, 12, and 18, FACE-Q scores were 70, 73, 58, and 50, respectively, versus baseline score of 32. Subjects reported a high level of satisfaction with Vollure XC throughout the study, with 82% of subjects very satisfied with treatment at Month 6, 76% at Month 12, 68% at Month 18, and 94% at 1 month after repeat treatment. Common ISRs during initial treatment with Vollure XC were firmness (89%), swelling (86%), and tenderness to touch (84%). Most ISRs were mild or moderate in severity.

Conclusion: Treatment with Vollure XC was safe and effective for correcting moderate to severe NLFs, with results lasting through 18 months in over 50% of subjects.

INTRODUCTION

- Correction of nasolabial folds (NLFs) can be accomplished using injectable hyaluronic acid (HA) gels to provide volume and restore the natural 3-dimensional contour of the targeted area[1,2]
- Juvéderm Vollure™ XC (17.5 mg/mL; Allergan plc, Dublin, Ireland) belongs to a family of versatile, highly moldable HA gels based on the Vycross® technology platform (Allergan plc, Dublin, Ireland), which combines low– and high–molecular-weight HA to improve the crosslinking efficiency of the HA chains[3]
- The tightly crosslinked HA network yields a gel with greater lift capacity and improved response durability[3,4]
- Lidocaine is included in the Vollure XC formulation to reduce the need for conventional anesthetics during the procedure[4,5]
- The objective of the present study was to investigate the safety and effectiveness of Vollure XC for the long-term correction of moderate to severe NLFs through 18 months and at 1 month after repeat treatment

METHODS

Study Design

- This was a prospective, multicenter, randomized, within-subject–controlled study investigating the safety and effectiveness of Vollure XC for up to 18 months after treatment in 6 US sites (clinicaltrials.gov identifier NCT01976663)
- Each site had an unblinded treating investigator (TI) and a blinded evaluating investigator (EI)
- Eligible subjects were randomized to initial treatment with Vollure XC in either the right or left NLF and control HA filler in the contralateral NLF; this poster reports long-term data for Vollure XC treatment
- Subjects received optional touch-up treatment 30 days after the initial treatment if determined necessary by the TI, in addition to optional asymmetry correction and repeat treatment administered as follows:
  - Within 4 weeks after the Month 9, 12, and 15 visits, subjects were eligible for a single optional treatment with Vollure XC to correct clinically significant asymmetry, defined as ≥1-point difference between NLFs on the validated 5-point photonumeric NLF Severity Scale (NLFSS)
  - Within 4 weeks after the Month 12 or 15 visits, subjects were eligible for optional repeat treatment if the NLFSS had returned to baseline or worse for both NLFs or if the subject previously received asymmetry correction in 1 NLF and had clinically significant asymmetry, with the contralateral NLF being more severe
  - All subjects who did not have repeat treatment before the Month 18 visit could receive repeat treatment with Vollure XC in 1 or both NLFs at the Month 18 visit
- The subjects and EIs remained blinded to the treatment assignment for each NLF throughout the study

Subjects

- Inclusion criteria were age ≥18 years; 2 fully visible NLFs, both with a score of 2 (moderate) or 3 (severe) on the validated 5-point photonumeric NLFSS as assessed by the EI; and agreement by the subject to refrain from other antiwrinkle/volumizing treatments in facial regions below the orbital rim for the study duration
- Among the exclusion criteria were tissue augmentation in the lower two-thirds of the face with dermal fillers within the previous 12 months or with fat or botulinum toxin injections within the previous 6 months; cosmetic facial procedures in the face or neck within the previous 6 months; and semipermanent fillers or permanent facial implants in the lower face

Assessments

- Routine follow-up visits to assess safety and effectiveness occurred at Day 3 and 14 after each treatment; at Month 1, 3, 6, 9, 12, 15, and 18 after the last treatment (initial or touch-up); and at Month 1 after repeat treatment
- EIs evaluated the severity of NLFs using the NLFSS (0=none; 1=mild; 2=moderate; 3=severe; 4=extreme) at screening, at Month 1, 3, 6, 9, 12, 15, and 18 after the initial/touch-up treatment, and at Month 1 after repeat treatment
- Subjects completed the Appraisal of Nasolabial Folds scale of the FACE-Q questionnaire at screening and at Months 3, 6, 12, and 18, and also rated satisfaction with treatment for each NLF at all follow-up visits using an 11-point scale (0=completely dissatisfied; 10=completely satisfied)
- Subjects reported injection site responses (ISRs) in a 30-day safety diary and rated the severity of the ISRs as mild, moderate, or severe
  - ISRs that were ongoing at the end of the diary entries were considered adverse events (AEs)

Statistical Analyses

- Effectiveness analyses were conducted on all randomized subjects who received study treatment
- The responder rate was the percentage of NLFs that showed ≥1-point improvement from baseline in the EI's live assessment of the NLFSS score
- Any NLF treated for asymmetry correction or repeat treatment before the visit was defined as a nonresponder for that visit
- Subject responses to the 5 items of the Appraisal of Nasolabial Folds scale of the FACE-Q questionnaire were combined into an overall score ranging from 0 (subject is extremely bothered by the appearance of the NLF) to 100 (subject is not at all bothered by the appearance of NLF)
  - The percentage of subjects who reported feeling moderately or extremely bothered was calculated for each of the 5 FACE-Q items
  - Means and 95% confidence intervals (CIs) for overall FACE-Q scores were calculated for each timepoint; lack of overlap between 95% CIs for post-treatment versus baseline mean scores indicated a significant difference from baseline
  - For NLFs treated for asymmetry correction or repeat treatment before the visit, the last-observation-carried-forward score on the FACE-Q was used for future visits
- Other effectiveness endpoints and safety parameters were analyzed descriptively

RESULTS

Subjects

- A total of 126 subjects were enrolled, 123 (97.6%) of whom received initial treatment
- Subjects who received touch-up, asymmetry, and repeat treatment totaled 63 (51.2%), 45 (36.6%), and 85 (69.1%), respectively
- Of the 126 subjects enrolled, 84 (66.7%) completed the study (receiving initial and repeat treatment and completing the final study visit)
- Subjects were primarily female and white, with a mean baseline NLFSS score of moderate or severe (**Table 1**); all Fitzpatrick skin types were represented

Table 1. Baseline Demographics

Characteristic	Subjects (N=123)
Age, median (range), years	54 (33–83)
Female, n (%)	117 (95.1)
Race	
White	91 (74.0)
Black	26 (21.1)
Other	6 (4.9)
Ethnicity, n (%)	
Hispanic or Latino	29 (23.6)
Not Hispanic or Latino	94 (76.4)
Fitzpatrick skin phototype, n (%)	
I	14 (11.4)
II	27 (22.0)
III	31 (25.2)
IV	20 (16.3)
V	18 (14.6)
VI	13 (10.6)
NLFSS score, mean (SD)	2.6 (0.49)

NLFSS, Nasolabial Fold Severity Scale; SD, standard deviation.

Treatment

- The median volume of Vollure XC injected for repeat treatment was approximately one-third of the combined initial/touch-up treatment, and serial puncture was the most common injection technique (**Table 2**)
- Most subjects (62/85; 72.9%) who received repeat treatment did not need or request it until the Month 18 visit

Table 2. Treatment Administration for NLFs Treated With Vollure XC

Parameter	Initial and Touch-up Treatment (n=123)	Repeat Treatment (n=85[a])
Volume injected per NLF, median (range), mL	Total: 1.7 (0.1–3.0) Initial: 1.4 (0.1–3.0) Touch-up: 0.7 (0.1–1.5)[b]	0.6 (0.0–1.6)
Injection technique used, n (%)[c]		
Serial puncture	114 (92.7)	66 (77.6)
Tunneling	62 (50.4)	34 (40.0)
Fanning	39 (31.7)	26 (30.6)
Cross-hatching	20 (16.3)	8 (9.4)

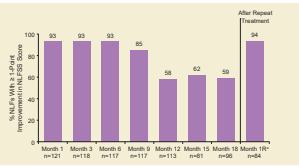
[a]Eighty-four NLFs initially treated with Vollure XC and 85 NLFs initially treated with control hyaluronic acid filler were injected with Vollure XC for repeat treatment; injection volumes are summarized for NLFs initially treated with Vollure XC.
[b]Fifty NLFs initially treated with Vollure XC had touch-up treatment with Vollure XC.
[c]Subjects may have received more than one injection technique.

Effectiveness

Investigator-Reported Outcomes

- The NLFSS responder rate exceeded 90% through Month 6, remained high at Month 9, decreased at Month 18 before repeat treatment, and again surpassed 90% at Month 1 after repeat treatment (**Figure 1**)

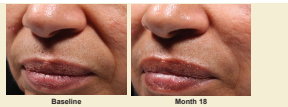
Figure 1. NLFSS Responder Rates Based on EI Assessments After Treatment With Vollure XC



NLFs, nasolabial folds; NLFSS, Nasolabial Fold Severity Scale.
[a]Month 1R designates the responder rate at 1 month following repeat treatment with Vollure XC.

- **Figure 2** shows photographs representative of the treatment effect of Vollure XC for a severe NLF at baseline with lasting improvement evident at Month 18

Figure 2. Representative Photographs of a Subject's Left NLF at Baseline and Month 18



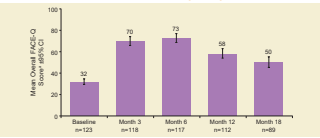
EI Rating (Baseline to Month 18)		Volume Injected[a]
Left NLF	Severe to Moderate	1.5 mL Vollure XC

EI, evaluating investigator; NLF, nasolabial fold.
[a]Subject did not receive touch-up or repeat treatment.

Patient-Reported Outcomes

- Improvement in overall FACE-Q scores over 18 months versus baseline showed continued benefit of Vollure XC from the subject perspective (**Figure 3**)
- Mean overall FACE-Q scores were 128%, 81%, and 56% higher than baseline at Months 6, 12, and 18, respectively, and were significantly higher than baseline (no overlap between 95% CIs) at all timepoints through Month 18

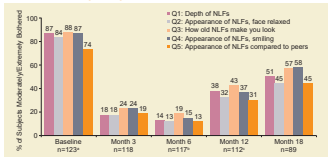
Figure 3. Mean Overall FACE-Q Scores From Subject Appraisal of NLFs After Treatment With Vollure XC by Study Visit



CI, confidence interval; NLFs, nasolabial folds.
[a]Responses to the 5 FACE-Q questions were combined into an overall NLF score ranging from 0 (extremely bothered by NLF) to 100 (not at all bothered). If an NLF was treated for asymmetry correction, then the last- observation-carried-forward score on the Appraisal of Nasolabial Folds scale for that NLF was used for future visits.

- Durable improvement after treatment was shown by the response to each of the 5 questions of the FACE-Q (**Figure 4**), with improvement from baseline maintained in the subjects' appraisal of their NLFs

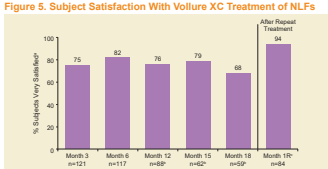
Figure 4. Percentage of Subjects Reporting Moderate or Extreme Bother for Each FACE-Q Item in Appraisal of NLFs After Treatment With Vollure XC by Study Visit



[a]Baseline: n=122 for Question 3.
[b]Month 6: n=116 for Questions 3 and 5.
[b]Month 12: n=111 for Questions 2, 4, and 5.

- Subjects also reported high levels of satisfaction with Vollure XC through 18 months and after repeat treatment (**Figure 5**)

Figure 5. Subject Satisfaction With Vollure XC Treatment of NLFs



NLFs, nasolabial folds.
[a]Subjects whose responses were in the 7 to 10 category on an 11-point scale (0=completely dissatisfied, 10=completely satisfied).
[b]Subject satisfaction responses for NLFs that received asymmetry correction at a prior visit were excluded from the analysis at Months 12, 15, and 18, leading to a difference in the denominators at those timepoints.
[c]Month 1R designates the responder rate at 1 month following repeat treatment.

Table 3. Injection Site Responses After Initial Treatment and After Asymmetry Correction/Repeat Treatment Combined

ISR	Initial Treatment (n=122)[a]	Asymmetry Correction/ Repeat Treatment (n=91)[a]
Any ISR, n (%)	116 (95.1)	72 (79.1)
Maximum severity, n (%)		
Mild	22 (19.0)	18 (25.0)
Moderate	58 (50.0)	29 (40.3)
Severe	36 (31.0)	25 (34.7)
ISR category, n (%)		
Firmness	108 (88.5)	63 (69.2)
Swelling	105 (86.1)	61 (67.0)
Tenderness to touch	103 (84.4)	59 (64.8)
Lumps/bumps	100 (82.0)	53 (58.2)
Redness	90 (73.8)	57 (62.6)
Pain after injection	88 (72.1)	48 (52.7)
Bruising	69 (56.6)	40 (44.0)
Itching	38 (31.1)	19 (20.9)
Discoloration	33 (27.0)	19 (20.9)

[a]Number of subjects who recorded in diaries after the specified treatment.
ISR, injection site response.

Safety

- The incidence of ISRs after asymmetry correction/repeat treatment with Vollure XC was lower than after initial treatment (**Table 3**)
  - The most common ISRs after initial treatment and asymmetry/repeat treatment were firmness, swelling, and tenderness to touch
  - Most ISRs were mild or moderate in severity, and the majority resolved within 2 weeks of initial (68.1%, 79/116) or asymmetry/repeat treatment (54.2%, 39/72)
- The proportion of Vollure XC-treated NLFs for which AEs were reported was 23.6% (29/123) after initial/touch-up treatment and 10.8% (10/93) after asymmetry/repeat treatment
  - The most common AEs were injection site induration (firmness), injection site mass (lumps/bumps), and injection site swelling
  - Most AEs were mild or moderate and resolved within 60 days, and few required any treatment

CONCLUSIONS

- Vollure XC was safe and effective for the long-term correction of moderate to severe NLFs, with improvements lasting through 18 months in 59% of subjects
- Repeat treatment with Vollure XC required one-third of the injection volume to achieve improvement in NLF severity similar to initial/touch-up treatment (ie, >90% responders)
- Subjects reported dramatic improvement from baseline in the appearance of their NLFs at all timepoints through Month 18 and were highly satisfied with Vollure XC treatment
- The safety profile of Vollure XC after asymmetry correction and repeat treatment was similar to that observed after initial treatment, although a lower proportion of subjects experienced ISRs after asymmetry/repeat treatment compared with initial treatment
- The prolonged duration of response with Vollure XC suggests that repeat treatment may be required less frequently with Vollure XC

REFERENCES

1. Fitzgerald R, et al. *Aesthet Surg J*. 2010;30(Suppl):36-45S.
2. Bass LS. *Facial Plast Surg Clin North Am*. 2015;23:479-88.
3. Sattler G, et al. *Dermatol Surg*. 2017;43:238-45.
4. Eccleston D, Murphy DK. *Clin Cosmet Investig Dermatol*. 2012;5:167-72.
5. Raspaldo H, et al. *J Cosmet Dermatol*. 2010;9:11-15.

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