Barzolvolimab Improves Angioedema and Demonstrates Corresponding Benefits in Quality of Life in Chronic Spontaneous Urticaria

M. Metz,[1,2] J. Anderson,[3] J. Leflein,[4] M. Gotua,[5] N. Talreja,[6]
D. M. Maurer,[7] L. Duan,[7] S. Greenberg,[7] A. Lokku,[7] J. A. Bernstein[8]

[1]Institute of Allergology, Charité-University Medical Center Berlin, corporate member of Freie Universität Berlin and Humboldt-Universität zu Berlin, Berlin, Germany; [2]Fraunhofer Institute for Translational Medicine and Pharmacology ITMP, Immunology and Allergology, Berlin, Germany; [3]University of Alabama, Birmingham and VA Medical Center, Clinical Research Center of Alabama, AllerVie Health, Birmingham, Alabama, USA; [4]Allergy and Immunology Associates of Ann Arbor, Ann Arbor, Michigan, USA; [5]Center of Allergy and Immunology, GOTUA Medical Center, Tbilisi, Georgia; [6]The Allergy Group and Treasure Valley Medical Research, Boise, Idaho, USA; [7]Celldex Therapeutics, Inc., Hampton, New Jersey, USA; [8]University of Cincinnati College of Medicine and Advanced Allergy Group/Bernstein Clinical Research Center Cincinnati, Ohio, USA

Presented at ACAAI 2026 Annual Scientific Meeting; Phoenix, AZ; November 14, 2026

DISCLOSURES

- **M. Metz:** advisory board (honoraria): Novartis, Regeneron Pharmaceuticals Inc., Sanofi, Galderma, Amgen, AstraZeneca, Celldex, argenx, GlaxoSmithKline Immunology, Incyte Corporation, Jasper Therapeutics, Escient Pharmaceuticals, Inc., Arcutis Biotherapeutics, Astria Therapeutics, Blueprint Medicines, Deep Apple Therapeutics, Evommune, Inc., Granular Therapeutics, Johnson & Johnson Pharmaceutical Research & Development, Eli Lilly, RAPT Therapeutics, Santa Ana Bio, Septerna, and Allegria Therapeutics; speaker (honoraria): Pfizer Inc., Sanofi, Almirall, Celltrion, Galderma, Novartis, AbbVie, and Berlin Chemie; speaker/faculty education (honoraria): Almirall; consultant (1099 relationship - honoraria): argenx, Attovia Therapeutics, Lycia Therapeutics, Enanta Pharmaceuticals, Bayer, Candid, Excellergy, FatiAbGen, Generate Biomedicines, InflaRx, Japan Tobacco Inc., Ono, and Tupos; and investigator (no compensation received): Bayer.
- **J. Anderson:** served as speaker bureau member for Astra Zeneca, Sanofi/Blueprint, CSL Behring, Ionis, GSK, KalVista, Pharming, and Takeda; received consulting fees from Astria, BioCryst, Sanofi/Blueprint, CSL Behring, Ionis, GSK, Kalvista, Novartis, Pharming, Santa Ana Bio, and Takeda; and is a clinical trial investigator for Astria, Sanofi/Blueprint, Biocyrst, Celldex Therapeutics, Inc., CSL Behring, Kalvista, Novartis, and Pharming.
- **N. Talreja:** received grant research funding for clinical trials with AbbVie, Aclaris, Allakos, Amgen, AnaptyBio Inc, Arcutis, Ardelyx, Arena, ARS, AstraZeneca, BioHaven, Blueprint, Braintree, Castle, Celldex, CinDome Pharma, Dr. Falk Pharma GmbH, Eli Lilly, Escient, Evommune, Gossamer, GSK, Incyte, Janssen, Jasper, Knopp, Nerre, Novartis, Optinose, Pearl Therapeutics, Pfizer, Phathom, Q32, Regeneron, Sanofi, Seres, Teva, Uniquity, Upstream Bio, and 9 Meters.
- **D. M. Maurer, L. Duan, and S. Greenberg:** employees of Celldex Therapeutics with stock, stock options, salary.
- **J. A. Bernstein:** investigator (paid to institution) and consultant (honoraria): ADARx, Ajou University, Allergy Therapeutics, Amgen, Apogee, Areteia, ARS, Astra Zeneca, Astria, Biocryst, Blueprint Medicines, Celldex, Cogent, CSL Behring, Eli Lilly, Escient, Evommune, Fresenius Kabi, Genentech, GSK, Incyte, Intellia, Ionis, Japan Tobacco Company, Jasper, Johnson & Johnson, Kalvista, Kenvue, Kymera, Kyowa, Kirin, Lycia, Medscape, Merck, Nasus, Neffy, Nektar, Neopharma, Novartis, Opella, Pharming, Pharvaris, Procter & Gamble, Regeneron, Sanofi, Takeda/Shire, Telios, Teledoc, TEVA, Yuhan, WebMD, and Peer Review; consultant (honoraria): Enanta, Pfizer, and RAPT; speaker (honoraria): Pharming, Kalvista, and CSL Behring; chairman (salaried): AAAAI Foundation; and organizational (no compensation): President of Interasma, WE CU Board of Directors, US Hereditary Angioedema Association Medical Advisory Board, Cincinnati Urticaria Center of Reference and Excellence/Angioedema Center of Reference and Excellence, World Allergy Organization Centers of Excellence, and Cincinnati American Initiative in Mast Cell Diseases Center of Excellence.
- **J. Leflein and M. Gotua:** none.
- **A. Lokku:** contractor with Celldex Therapeutics.

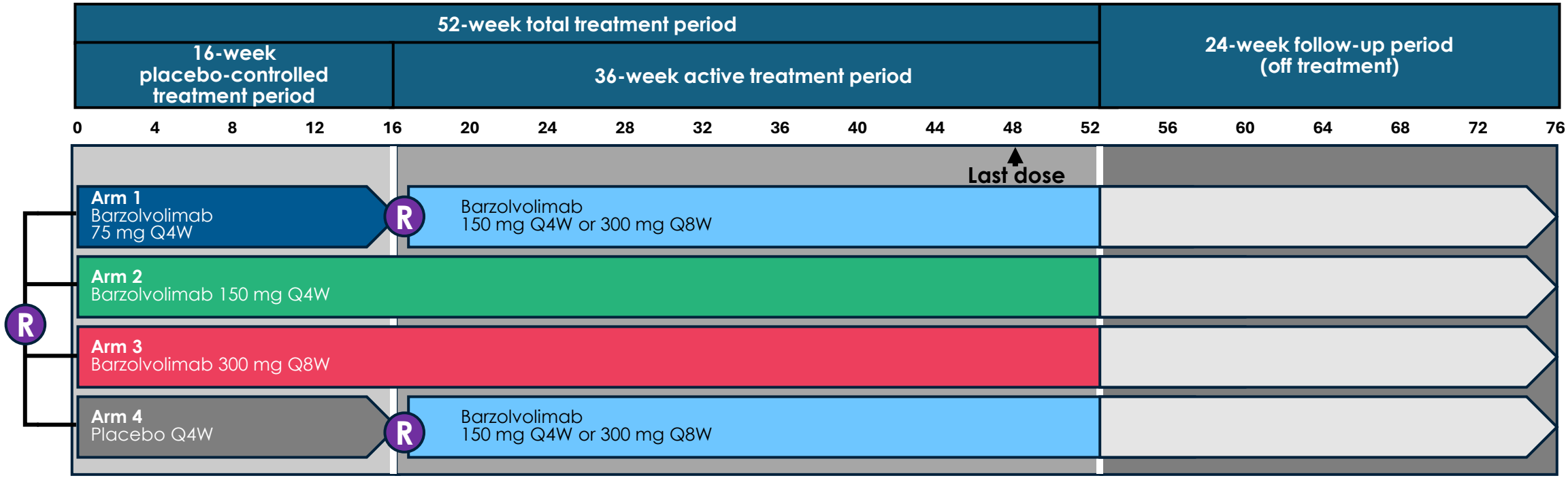
INTRODUCTION

- Mast cells (MCs) are key effector cells that drive the development of itch, wheals, and angioedema in chronic spontaneous urticaria (CSU)[1]
- Angioedema impacts approximately 50% of patients with CSU and is associated with increased severity and duration of disease, as well as diminished quality of life[2]
- Barzolvolimab is a highly potent, first-in-class anti-KIT monoclonal antibody that depletes MCs and is well tolerated and effective in patients with antihistamine-refractory CSU[3]
- Barzolvolimab treatment for 52 weeks led to Complete Response (weekly Urticaria Activity Score [UAS7] = 0) in up to 70% of patients, and 41% of patients maintained Complete Response 7 months after the last dose[3]
- Barzolvolimab treatment also led to rapid, clinically meaningful improvements in the weekly Angioedema Activity Score (AAS7), and up to 77% of patients who experienced angioedema at baseline were angioedema free (AAS7 = 0) at Week 52[1,4]

References: 1. Metz M, et al. *J Allergy Clin Immunol*. 2026;S0091-6749(26)00129-6. **2.** Sussman G, et al. *Allergy*. 2018;73(8):1724-1734. **3.** Metz M, et al. Sustained Disease Control Following Withdrawal of Barzolvolimab in Patients with Chronic Spontaneous Urticaria. Presented at EAACI Congress; June 13-16, 2025; Glasgow, UK. **4.** Metz M, et al. Treatment With Barzolvolimab Leads to Sustained Improvement in Angioedema in Patients With Chronic Spontaneous Urticaria (CSU): Results from 52 Weeks of Treatment. Presented at EAACI Congress; June 13-16, 2025; Glasgow, UK.

STUDY DESIGN

- Patients with moderate to severe antihistamine-refractory CSU (UAS7 ≥16; N=207) were randomized to receive barzolvolimab subcutaneously at doses of 75 mg every 4 weeks (Q4W), 150 mg Q4W, 300 mg every 8 weeks (Q8W), or placebo for 16 weeks (placebo-controlled treatment phase)
- At Week 16, placebo and 75-mg Q4W dose groups were re-randomized to receive 150 mg Q4W or 300 mg Q8W to Week 52 (active treatment phase); 150-mg Q4W and 300-mg Q8W groups maintained their dose during the active treatment phase
- At Week 52, patients entered a 24-week off-treatment follow-up period to Week 76



R, equal randomization.

METHODS

Assessments

- AAS **measures 5 dimensions of angioedema** (ie, duration, physical discomfort, impact on daily activities, impact on appearance, and overall severity) within the last 24 hours[1]
  - AAS7 is the sum of all AAS dimensions of the preceding 7 days with scores ranging from 0-105; **higher scores indicate more severe symptoms**[2]
- Dermatology Quality of Life Index (DLQI) measures the impact of CSU on patient QoL within the last week[3]
  - Scores range from 0-30; higher scores indicate greater impairment of CSU on QoL. **DLQI = 0/1 is** defined as **no impact of disease on QoL**

Analysis

- This post hoc analysis included patients with available AAS7 and DLQI data at baseline, Week 52, and Week 76 who received barzolvolimab 150 mg Q4W or 300 mg Q8W
- The **percentage of barzolvolimab-treated patients achieving AAS7 = 0** at Week 52 and Week 76 is reported
- Among patients who achieved AAS7 = 0, the percentage that **concurrently achieved DLQI = 0/1** is reported
- Pearson correlations assessed the **association between AAS7 and DLQI** at baseline, Week 52, and Week 76 in barzolvolimab-treated patients

Objective

- To assess the effects of barzolvolimab on angioedema and the association of angioedema to QoL at Week 52 and Week 76

References: 1. Weller K, et al. *Allergy*. 2013;68(9):1185-1192. **2.** Rodríguez-Garijo N, et al. *J Allergy Clin Immunol: In Practice*. 2022;10(11):3039-3043. **3.** Finlay AY, et al. *Clin Exp Dermatol*. 1994;19(3):210-216.

DEMOGRAPHICS AND BASELINE CHARACTERISTICS

- A total of 77 patients with CSU who received barzolvolimab 150 mg Q4W and 300 mg Q8W had angioedema at baseline (AAS7 >0)
- The means for AAS7 at baseline in these treatment groups were 55 and 53 points, indicating patients presented with severe angioedema symptoms prior to treatment

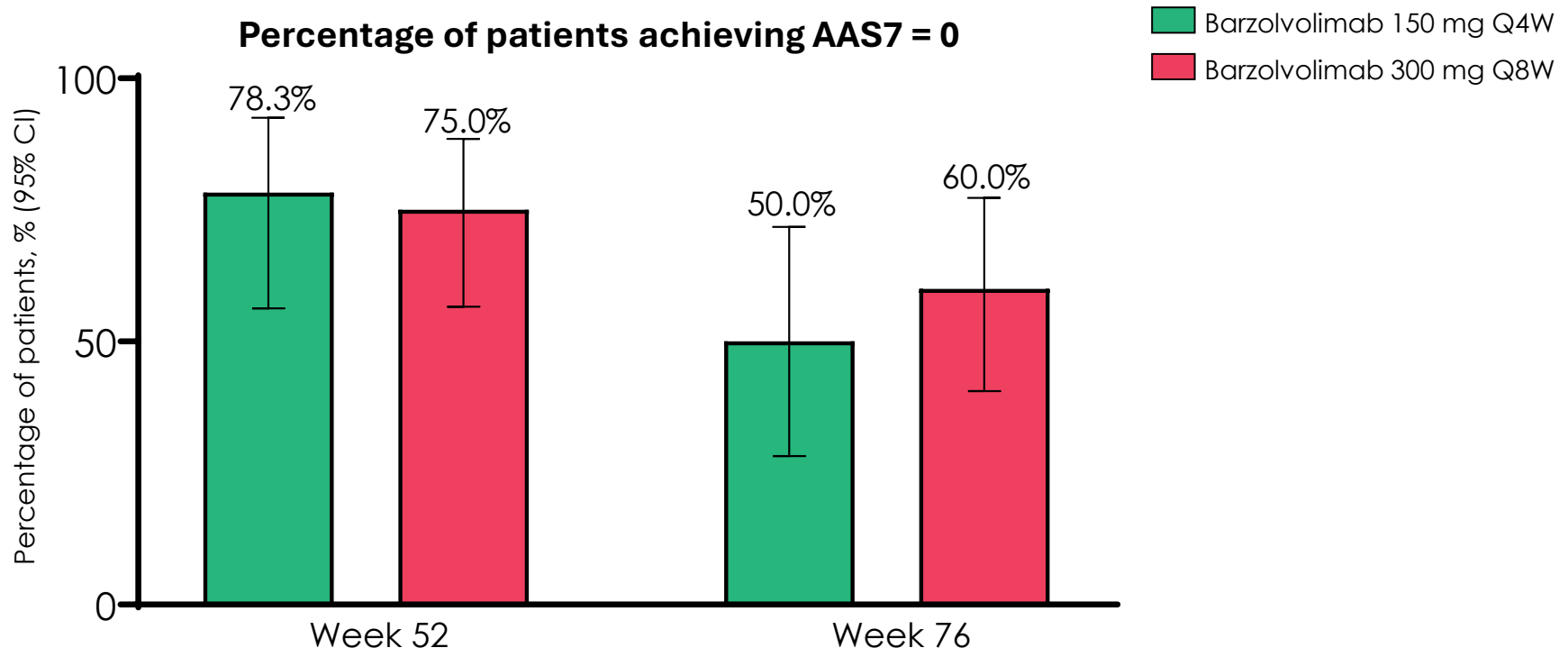
Baseline demographics and disease characteristics in patients with AAS7 >0 at baseline

	Barzolvolimab 150 mg (N=35)	Barzolvolimab 300 mg (N=42)
Age, y, mean (SD)	43.4 (12.0)	48.1 (12.9)
Sex, female, n (%)	24 (68.6)	34 (81.0)
Race, White, n (%)	24 (68.6)	32 (76.2)
Weight, kg, mean (SD)	84.1 (23.9)	87.4 (25.9)
Duration of disease, y, mean (SD)	5.7 (6.9)	6.4 (6.8)
UAS7 score, mean (SD)	31.6 (6.8)	31.5 (7.1)
UAS7 score, severe disease,[a] n (%)	26 (74.3)	31 (73.3)
AAS7 score, mean (SD)	54.6 (27.8)	53.2 (28.9)
DLQI score,[b] mean (SD)	16.4 (7.8)	17.5 (8.1)
Omalizumab experienced,[c] n (%)	11 (31.4)	10 (23.8)

- This post hoc analysis included only the subpopulation of patients with both AAS7 and DLQI data available who received barzolvolimab 150 mg Q4W or 300 mg Q8W

Unless otherwise stated, all values represent means. [a]Severe UAS7 range 28-42. [b]Number of patients with a DLQI score measured at baseline: barzolvolimab 150 mg = 33; barzolvolimab 300 mg = 42. [c]Includes patients with inadequate response or intolerance to omalizumab, patients that have received prior omalizumab, and patients who are both refractory and not refractory.

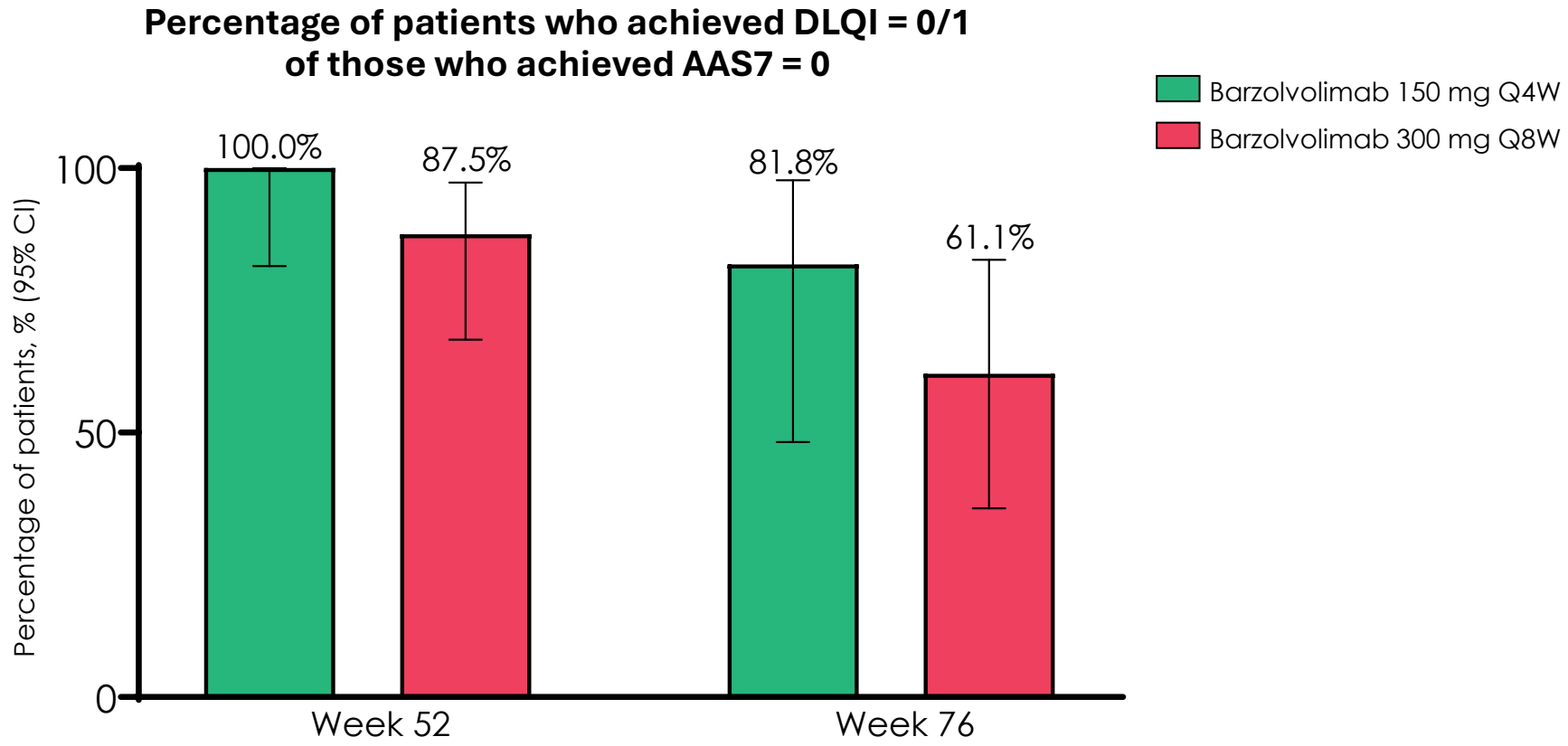
Barzolvolimab treatment results in high rates of angioedema-free status that are sustained up to 7 months after the last dose



- Among patients with angioedema at baseline, barzolvolimab treatment resulted in high rates of AAS7 = 0[a,b]
- Angioedema-free status in this subgroup persisted up to Week 76, 28 weeks following the last dose of barzolvolimab

[a]Baseline angioedema = AAS7 >0 at baseline. [b]Angioedema-free status = AAS7 = 0.
Analyses are as-observed.

In patients with CSU who achieved angioedema-free status, barzolvolimab is associated with sustained improvements in QoL up to 7 months after the last dose



- Among those with angioedema at baseline who achieved angioedema-free status with barzolvolimab, many patients also achieved DLQI = 0/1[a,b]
- Concurrent improvements in AAS7 and DLQI persisted up to Week 76, 28 weeks following the last dose of barzolvolimab

[a]Baseline angioedema = AAS7 >0 at baseline. [b]Angioedema-free status = AAS7 = 0.
Analyses are as-observed.

Improvements in angioedema are positively correlated with improvements in QoL through Week 76

Pearson correlations in change from baseline in DLQI and AAS7 through Week 76[a]

	Barzolvolimab 150 mg Q4W	Barzolvolimab 300 mg Q8W
Baseline	+0.365*	+0.372*
Week 52	+0.583**	+0.848****
Week 76	+0.654**	+0.483**

- Significant positive correlations were observed between the change from baseline in AAS7 and DLQI through Week 76 (r = 0.37-0.85; *P*<0.05)

[a]Data are represented as r (Pearson Correlation coefficient) and *P* value, **P*<0.05, ***P*<0.01, ****P*<0.001, *****P*<0.0001.

CONCLUSIONS

- Among patients with moderate to severe antihistamine-refractory CSU and **angioedema at baseline**, treatment with barzolvolimab resulted in **significant and sustained improvements in angioedema**
- Barzolvolimab treatment led to **high rates of angioedema-free status** that persisted up to 7 months after the last dose in many patients
- Barzolvolimab-induced angioedema-free status was associated with the **achievement of no effect of CSU on the patient's QoL**
- Barzolvolimab is a promising treatment in antihistamine-refractory patients with CSU who experience severe angioedema
- These Phase 2 results, combined with a **favorable safety profile**, support the ongoing Phase 3 studies (NCT06445023; NCT06455202) of barzolvolimab in patients with CSU

Metz M, et al. *J Allergy Clin Immunol*. 2026;S0091-6749(26)00129-6.

THANK YOU