P0114

Barzolvolimab Treatment Leads to Substantial Improvement in Patient-Reported Outcomes and Demonstrates Corresponding Benefits in Quality of Life in Chronic Inducible Urticaria

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INTRODUCTION

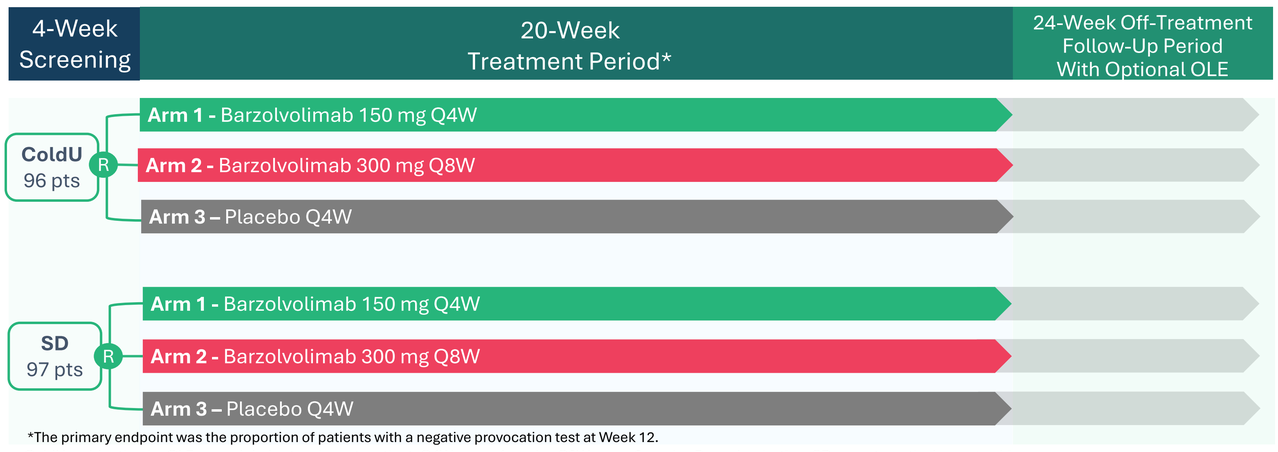
- Mast cells (MCs) are central effector cells in chronic urticaria and play a role in chronic inducible urticaria (CIndU) pathophysiology[1]
- Barzolvolimab, a humanized monoclonal antibody that inhibits stem cell factor–mediated KIT activation, depletes skin MCs and may improve symptoms of disease in patients with CIndU[1]
- In antihistamine-refractory patients with chronic spontaneous urticaria, barzolvolimab treatment demonstrated significant and clinically meaningful improvement in weekly Urticaria Activity Score at 12 weeks, with deepening of response over 52 weeks and sustained response 7 months after the last dose of barzolvolimab (NCT05368285)[2]
- In a placebo-controlled Phase 2 study (NCT05405660), barzolvolimab demonstrated clinically meaningful and statistically significant improvements with up to 53% of patients with cold urticaria (ColdU) and 58% of patients with symptomatic dermographism (SD) treated with barzolvolimab achieving the primary endpoint (a negative provocation test) at Week 12[3]

OBJECTIVE

- To characterize whether improvements in disease-related symptoms, as reported in patients' daily diaries and reflecting the day-to-day patient experience beyond provocation-based assessments, are associated with improvements in quality of life (QoL) measures among patients with ColdU or SD enrolled in a Phase 2, placebo-controlled study of barzolvolimab

STUDY DESIGN

A Randomized, Double-Blind, Placebo-Controlled, Dose-Ranging Study



*The primary endpoint was the proportion of patients with a negative provocation test at Week 12.
ColdU, cold urticaria; OLE, open-label extension; pt, patient; Q4W, every 4 weeks; Q8W, every 8 weeks; R, randomization; SD, symptomatic dermographism.

METHODS

- Data were collected from a Phase 2, double-blind, placebo-controlled study (NCT05405660) evaluating the effects of subcutaneous barzolvolimab in participants with ColdU and SD
- Symptom severity data were obtained from patient-recorded daily diaries
- This analysis evaluated least squares (LS) mean difference vs placebo for the change from baseline (CfB) at Week 20 for the weekly average numeric rating scale (NRS) scores for worst symptom severity, including:
  - Worst itch (WI-NRS)
  - Worst hives (WH-NRS)
  - Worst burning (WB-NRS)
  - Worst pain (WP-NRS)
- Mean CfB in Dermatology Life Quality Index (DLQI) at Week 20 was also evaluated
- The mean CfB in the weekly average WI-NRS, WH-NRS, WB-NRS, and WP-NRS at Week 20 was analyzed using analysis of covariance across both CIndU subtype cohorts
- Pairwise Pearson correlation analyses were performed between mean CfB at Week 20 in DLQI scores and mean CfB at Week 20 in weekly average WI-NRS, WH-NRS, WB-NRS, and WP-NRS

DEMOGRAPHICS & BASELINE CHARACTERISTICS

	ColdU			SD		
	Barzolvolimab 150 mg Q4W (N=32)	Barzolvolimab 300 mg Q8W (N=32)	Placebo (N=32)	Barzolvolimab 150 mg Q4W (N=33)	Barzolvolimab 300 mg Q8W (N=33)	Placebo (N=31)
Age, y	40 (18-72)	40 (18-64)	41 (20-69)	41 (19-70)	42 (21-70)	42 (18-71)
Female, n (%)	27 (84)	23 (72)	19 (60)	18 (55)	26 (79)	19 (61)
Weight, kg	83 (55-124)	82 (49-140)	83 (47-129)	84 (58-121)	85 (55-139)	83 (53-115)
CIndU duration, y	7 (0.3-31)	11 (0.3-49)	10 (0.3-34)	7 (0.3-53)	6 (0.3-41)	5 (0.4-23)
Baseline DLQI score	14.1 (1-30)	12.8 (2-26)	12.6 (1-30)	14.1 (3-30)	13.0 (1-28)	13.5 (1-26)
Baseline WI-NRS[a]	4.9 (3.0)	3.6 (2.6)	4.2 (2.8)	5.8 (2.7)	5.1 (2.4)	5.4 (2.2)
Baseline WH-NRS[a]	4.5 (3.2)	3.5 (2.6)	4.1 (2.9)	5.3 (2.5)	3.9 (2.8)	4.3 (2.4)
Baseline WP-NRS[a]	4.3 (3.2)	2.8 (2.5)	3.5 (3.1)	4.1 (3.2)	3.5 (2.9)	3.0 (2.7)
Baseline WB-NRS[a]	4.7 (3.1)	3.1 (2.7)	3.9 (3.1)	4.7 (3.0)	4.0 (2.8)	3.7 (2.8)

[a]Symptoms scores are weekly averages. CindU, chronic inducible urticaria; ColdU, cold urticaria; DLQI, Dermatology Life Quality Index; SD, symptomatic dermographism; Q4W, every 4 weeks; Q8W, every 8 weeks; WB-NRS, worst burning numeric rating scale; WH-NRS, worst hives numeric rating scale; WI-NRS, worst itch numeric rating scale; WP-NRS, worst pain numeric rating scale. Data shown are mean (SD) unless otherwise specified.

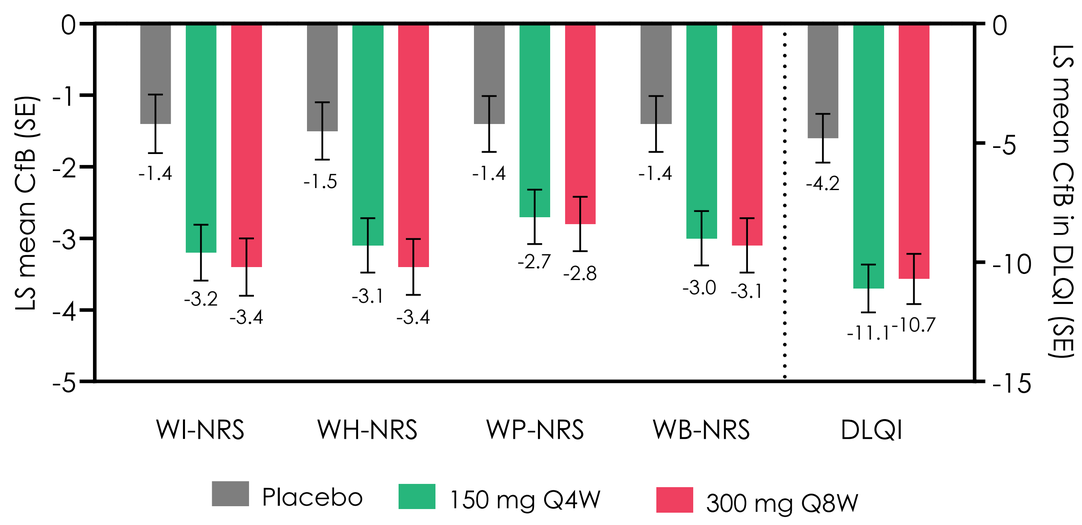
- Baseline demographics and disease characteristics were generally well balanced across treatment arms

CONCLUSIONS

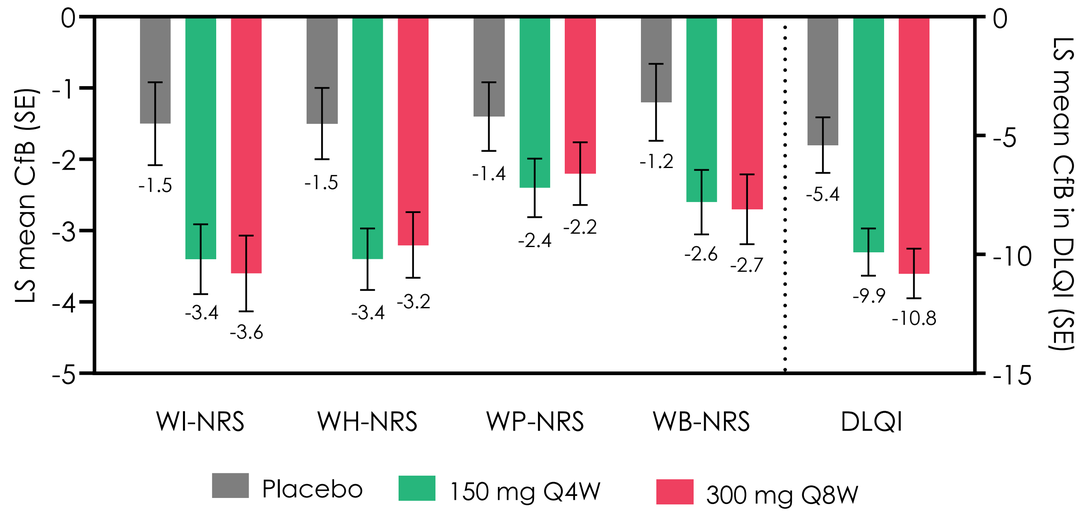
- **Barzolvolimab improved disease symptoms vs placebo among patients with ColdU and SD in their daily lives, with symptom improvement showing moderate to strong associations with improved QoL**
- **A randomized, placebo-controlled Phase 3 study of barzolvolimab in ColdU and SD is currently ongoing (NCT07266402)**

Patients with ColdU and SD treated with barzolvolimab vs placebo demonstrated improvement in disease symptoms and QoL at Week 20

ColdU



SD



CfB, change from baseline; ColdU, cold urticaria; DLQI, Dermatology Life Quality Index; LS, least squares; Q4W, every 4 weeks; Q8W, every 8 weeks; SD, symptomatic dermographism; WB-NRS, worst burning numeric rating scale; WH-NRS, worst hives numeric rating scale; WI-NRS, worst itch numeric rating scale; WP-NRS, worst pain numeric rating scale.

- For patients with ColdU, the LS mean change from baseline vs placebo was nominally significant ($P<0.01$) for all symptoms
- For patients with SD, the LS mean change from baseline vs placebo was nominally significant ($P<0.05$) for all symptoms, except for WP-NRS (for both doses)
- Barzolvolimab-treated patients with ColdU or SD had markedly greater improvements in DLQI from baseline to Week 20 vs placebo-treated patients

Positive correlation between symptom improvement and DLQI for barzolvolimab-treated patients

Correlation Between Symptom Improvement and DLQI

	ColdU			SD		
	Barzolvolimab 150 mg Q4W N=26	Barzolvolimab 300 mg Q8W N=28	Placebo N=27	Barzolvolimab 150 mg Q4W N=31	Barzolvolimab 300 mg Q8W N=26	Placebo N=18
WI-NRS, r[a]	0.67***	0.53**	0.23	0.69***	0.70***	0.48*
WH-NRS, r[a]	0.66***	0.52**	0.26	0.55**	0.59**	0.47*
WP-NRS, r[a]	0.68***	0.55**	0.17	0.45*	0.38	0.44
WB-NRS, r[a]	0.70***	0.57**	0.32	0.59***	0.44*	0.48*

*$P<0.05$; **$P<0.01$; ***$P<0.001$. [a]Pearson correlation coefficients are calculated between change from baseline at Week 20 for both DLQI and symptom scores and Prob > |r| under H0: Rho=0. ColdU, cold urticaria; DLQI, Dermatology Life Quality Index; n, number of observations; Q4W, every 4 weeks; Q8W, every 8 weeks; r, Pearson correlation coefficient; SD, symptomatic dermographism; WB-NRS, worst burning numeric rating scale; WH-NRS, worst hives numeric rating scale; WI-NRS, worst itch numeric rating scale; WP-NRS, worst pain numeric rating scale.

- For barzolvolimab-treated patients with ColdU, correlation coefficients for mean CfB in symptoms and mean CfB in DLQI scores ranged from +0.52 to +0.70, indicating a positive correlation (all $P<0.01$)
- For barzolvolimab-treated patients with SD, correlation coefficients for WI-NRS, WH-NRS, and WB-NRS and change in DLQI scores ranged from +0.44 to +0.70, indicating a positive correlation (all $P<0.05$)

References

1. Alvarado D, et al. *Allergy*. 2022;77(8):2393-2403.
2. Metz M, et al. Poster presented at AAAAI 2026, February 19-22, 2026; New Orleans, LA.
3. Maurer M, et al. Presented at ACAAI 2024, October 24-28, 2024; Boston, MA.

Disclosures

MM: advisory board (honoraria): Novartis, Regeneron Pharmaceuticals Inc., Sanofi, Galderma, Amgen, AstraZeneca, Celldex Therapeutics, Inc., 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, Allegria Therapeutics; speaker (honoraria): Pfizer Inc., Sanofi, Almirall, Celltrion, Galderma, Novartis, AbbVie, Berlin Chemie; speaker/faculty education (honoraria): Almirall; paid consultant: argenx, Attovia Therapeutics, Lycia Therapeutics, Enanta Pharmaceuticals, Bayer, Candid, Excellergy, FatiAbGen, Generate Biomedicines, InflaRx, Japan Tobacco Inc., Ono, Tupos Therapeutics; investigator (no compensation received): Bayer. **AMG-A:** medical advisor (honoraria): Almirall, Amgen, Blueprint Medicines, Celldex Therapeutics, Inc., Celltrium, ESCIENT, FAES, Genentech, GSK, HiBio, Incyte, Jaspers, Leo Pharma, Mitsubishi Tanabe, Novartis, Noucor, Evommune, Pfizer, RAPT Therapeutics, Sanofi–Regeneron, Thermo Fisher Scientific, Septerna, Servier, Uriach Pharma; investigator (research grant): Escient, Noucor, Novartis, Instituto Carlos III-Fondo Europeo de Desarrollo Regional (FEDER), Uriach Pharma; educational activities (honoraria): Almirall, Avene, Genentech, GSK, LEO-PHARMA, Menarini, MSD, Noucor, Novartis, Sanofi, Uriach Pharma. **NH, TS, AL:** none. **JS-K:** salary: CD8 Clinic, Kaunas Lithuania for serving as a principal investigator during CDX00159-07 CIndU trial. **JP:** educational/research grants: Astria, Biocryst, Celldex Therapeutics, Inc., Intellia, Kalvista, Novartis, Pharvaris, Sanofi, Takeda/Shire; honoraria and speaker fees: Astra Zeneca, Astria, Biocryst, Celldex Therapeutics, Inc., Intellia, Johnson & Johnson, Kalvista, Novartis, Pharvaris, Sanofi, and Takeda/Shire. **BB, LD, PG, HL:** employees with stock, stock options, salary: Celldex Therapeutics, Inc. **JAB:** investigator (paid to institution) and consultant (honoraria): ADARx, Ajou University, Allergy Therapeutics, Amgen, Apogee, Areteia, ARS, Astra Zeneca, Astria, Biocryst, Blueprint Medicines, Celldex Therapeutics, Inc., 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, Proctor & Gamble, Regeneron, Sanofi, Takeda/Shire, Telios, Teledoc, TEVA, Yuhan, WebMD, Peer Review; consultant (honoraria): Enanta, Pfizer, RAPT); speaker (honoraria): Pharming, Kalvista, CSL Behring – honoraria; chairman (salaried): American Academy of Allergy, Asthma, and Immunology Foundation; organizational (no compensation): President of Global Asthma Association 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, Cincinnati American Initiative in Mast Cell Diseases Center of Excellence.