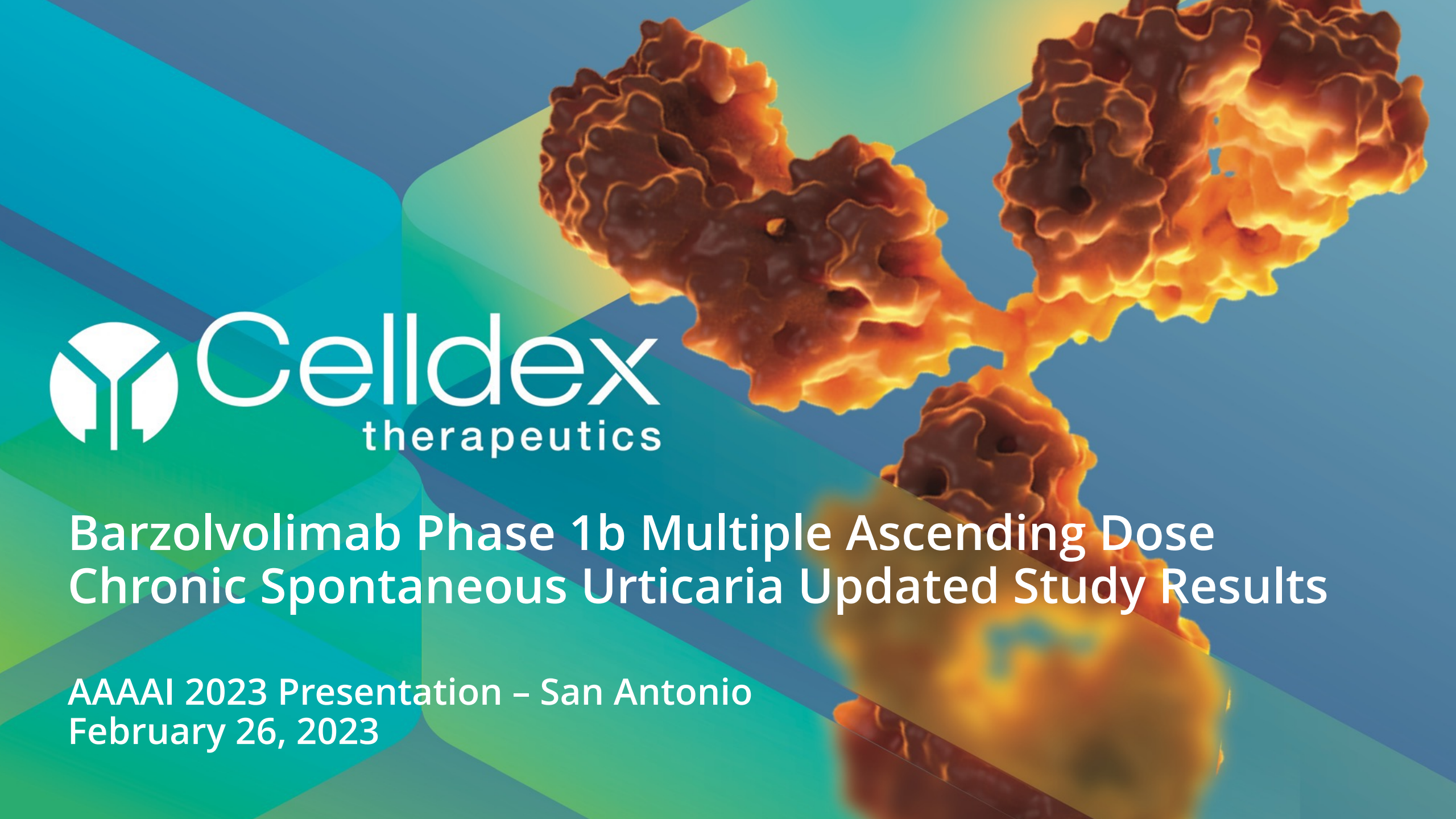


Celldex therapeutics

Barzolvolimab Phase 1b Multiple Ascending Dose Chronic Spontaneous Urticaria Updated Study Results

AAAAI 2023 Presentation – San Antonio
February 26, 2023

Safe Harbor Statement

This communication contains "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact are statements that could be forward-looking statements. You can identify these forward-looking statements through our use of words such as “may,” “will,” “can,” “anticipate,” “assume,” “should,” “indicate,” “would,” “believe,” “contemplate,” “expect,” “seek,” “estimate,” “continue,” “plan,” “point to,” “project,” “predict,” “could,” “intend,” “target,” “potential” and other similar words and expressions of the future. These forward-looking statements are subject to risks and uncertainties that may cause actual future experience and results to differ materially from those discussed in these forward-looking statements. Important factors that might cause such a difference include, but are not limited to, the timing, cost and uncertainty of obtaining regulatory approvals for product candidates; our ability to develop and commercialize products before competitors that are superior to the alternatives developed by such competitors; the validity of our patents and our ability to avoid intellectual property litigation, which can be costly and divert management time and attention; and the other factors listed under “Risk Factors” in our filings with the SEC, including Forms 10-K, 10-Q and 8-K. Celldex does not undertake any obligation to release publicly any revisions to such forward-looking statement to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

Agenda & Speakers

Agenda	Speakers & Management
• Discussion on Barzolvolimab Phase 1b Multiple Ascending Dose Chronic Spontaneous Urticaria Updated Study Results	**Guest Speaker:** **Prof. Marcus Maurer, M.D.** Professor of Dermatology and Allergy at Charité in Berlin **Celldex Management:** **Anthony S. Marucci** Founder, President, Chief Executive Officer & Director **Diane C. Young, M.D.** Chief Medical Officer & Senior Vice President **Tibor Keler, Ph.D.** Founder, Executive Vice President & Chief Scientific Officer

Leading Medical Expert: Prof. Dr. Marcus Maurer, MD

Professor of Dermatology and Allergy; Head of Dermatological Allergology at the Allergie-Centrum-Charité; Head of the Specialty Clinics for Urticaria, Mastocytosis, MCAS, Pruritus, Autoinflammatory Syndromes and Angioedema and the Dermatological Allergology Lab at Charité – Universitätsmedizin Berlin, Germany

Conducting Phase 1b and Phase 2 CIndU and CSU Trials with Celldex

Prof Maurer is a Dermatologist and Allergologist, and he also trained in experimental pathology at the Beth Israel Deaconess Hospital and Harvard Medical School in Boston (1995-1998)

Coordinator of the Global Allergy and Asthma European Networks of urticaria and angioedema centers of reference and excellence, UCARE and ACARE

Areas of clinical interest include angioedema, urticaria, mastocytosis, pruritus, skin infections, and allergic diseases. Research is focused on the biology of mast cells, neuroimmunology, inflammation, innate immunity and tolerance

Has supervised more than 60 clinical trials, Phase 1 through 4. Contributed to more than 600 publications in peer-reviewed journals (>25.000 citations, H Index 79) and 40 books and book chapters

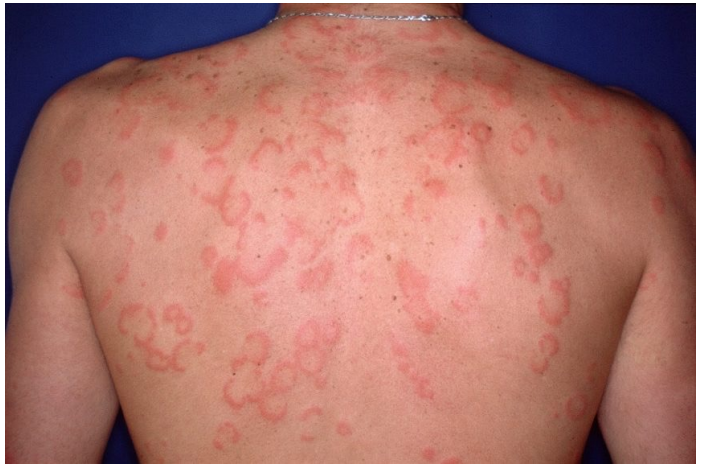
Phase 1b Multiple Ascending Dose Study of Barzolvolimab in Patients with Chronic Spontaneous Urticaria Refractory to Antihistamines

- Rapid, profound and durable responses in patients with moderate to severe CSU refractory to antihistamines, including in patients with prior omalizumab experience; potential best-in-class addition to a historically limited treatment landscape
- Well tolerated with a favorable safety profile; effects of multiple dose administration were consistent with observations in single dose studies
- Outstanding clinical activity across multiple dosing cohorts
- Unique mechanism of action as a mast cell depleting agent highlights broad potential across multiple mast cell driven diseases
- Data support continued development of barzolvolimab, including ongoing Phase 2 studies in CSU and CIndU
  - Expect to complete accrual of Phase 2 CSU study by the end of the third quarter and report topline data late 2023 or in first quarter of 2024

Barzolvolimab Opportunity in Chronic Spontaneous Urticaria Skin Mast Cells are the Primary Target Cell

Characterized by occurrence of urticaria for 6 weeks or longer without identifiable specific triggers

- Mast cell activation drives disease (release of histamines, leukotrienes, chemokines) resulting in episodes of itchy hives, swelling and inflammation of the skin that can go on for years or even decades
- Beyond skin-related symptoms, patients cope with numerous other psychosocial symptoms (e.g., depression, anxiety and insomnia) that impair quality of life
- One of the most frequent dermatologic diseases: prevalence of 0.5-1% of the total population (~1 to 3 M in the US)
- Current therapies provide symptomatic relief only in some patients; antihistamines, leukotriene receptor antagonists and Xolair
- Need for therapies that target the root cause: mast cells



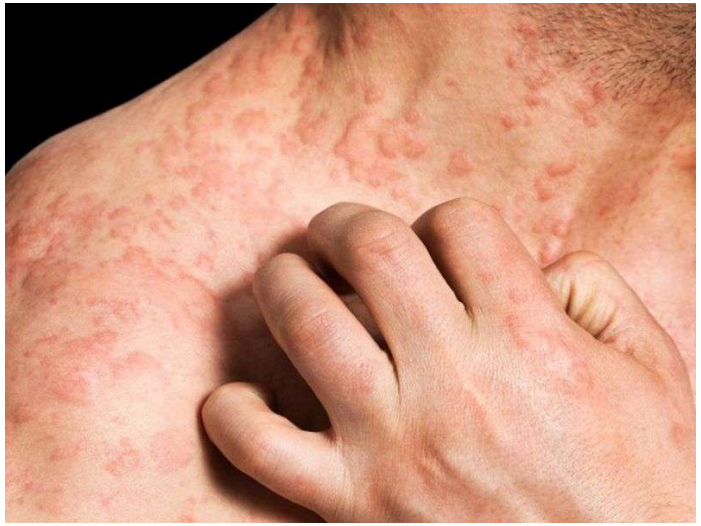
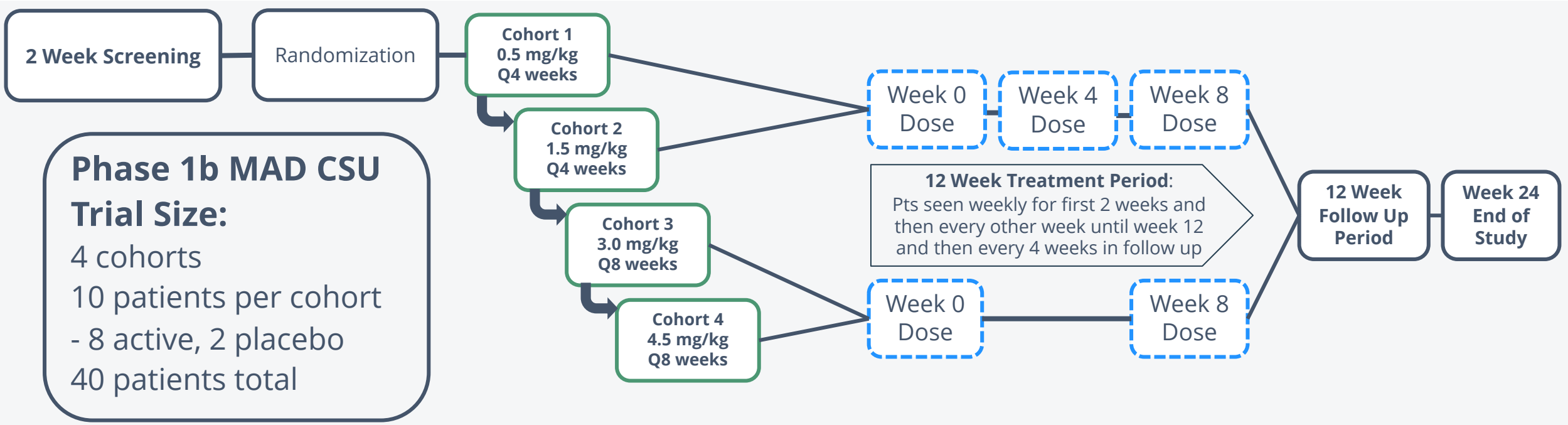


Image Sources:
https://www.pulmonologyadvisor.com/home/topics/allergies/phenotype-may-predict-omalizumab-response-in-chronic-spontaneous-urticaria/
https://medicalxpress.com/news/2016-03-omalizumab-effective-chronic-spontaneous-urticaria.html

Phase 1b Multiple Ascending Dose of Barzolvolimab Trial Design in Patients with CSU Refractory to Antihistamines



Phase 1b MAD CSU Trial Size:

4 cohorts

10 patients per cohort

- 8 active, 2 placebo

40 patients total

Population: Patients with CSU refractory to antihistamines; open to biologic naive & experienced

Design: Randomized, double-blind, placebo-controlled, multiple ascending dose escalation study

Primary Endpoint: Safety and Tolerability

Secondary Endpoints: Activity, PK, PD

Clinical Effect Evaluation: Urticaria Activity Score (UAS7), Hives Severity Score (HSS7), Itch Severity Score (ISS7), Urticaria Control Test (UCT)

As of the data cut-off on November 29, 2022:

Enrollment was complete with 45 patients with moderate to severe CSU refractory to antihistamines enrolled and treated [35 barzolvolimab (n=9 in 0.5 mg/kg; n=8 in 1.5 mg/kg; n=9 in 3.0 mg/kg; n=9 in 4.5 mg/kg) and 10 placebo]. The 0.5 mg/kg, 1.5 mg/kg and 3.0 mg/kg cohorts had completed study participation through 24 weeks; 6 of 9 patients in the 4.5 mg/kg cohort had completed through the week 20 visit. Complete data are included for all patients in dose levels through 3.0 mg/kg through 24 weeks. All available data for the 4.5 mg/kg and placebo dose levels were presented for adverse events. Activity data for the 4.5 mg/kg dose level were reported through week 20. **In this presentation, activity data for the 0.5 mg/kg and placebo group were only included through week 12 in data tables because, as expected, most patients from these groups had significant symptoms ahead of week 24 and discontinued follow up.** Two patients did not receive all doses of study treatment [4.5 mg/kg (1), placebo (1)].

Demographics and Baseline Characteristics

- Patient population is highly symptomatic (both hives and itching) as indicated by baseline scores with very severe symptoms and long duration of disease, often many years, ~37% with prior omalizumab experience

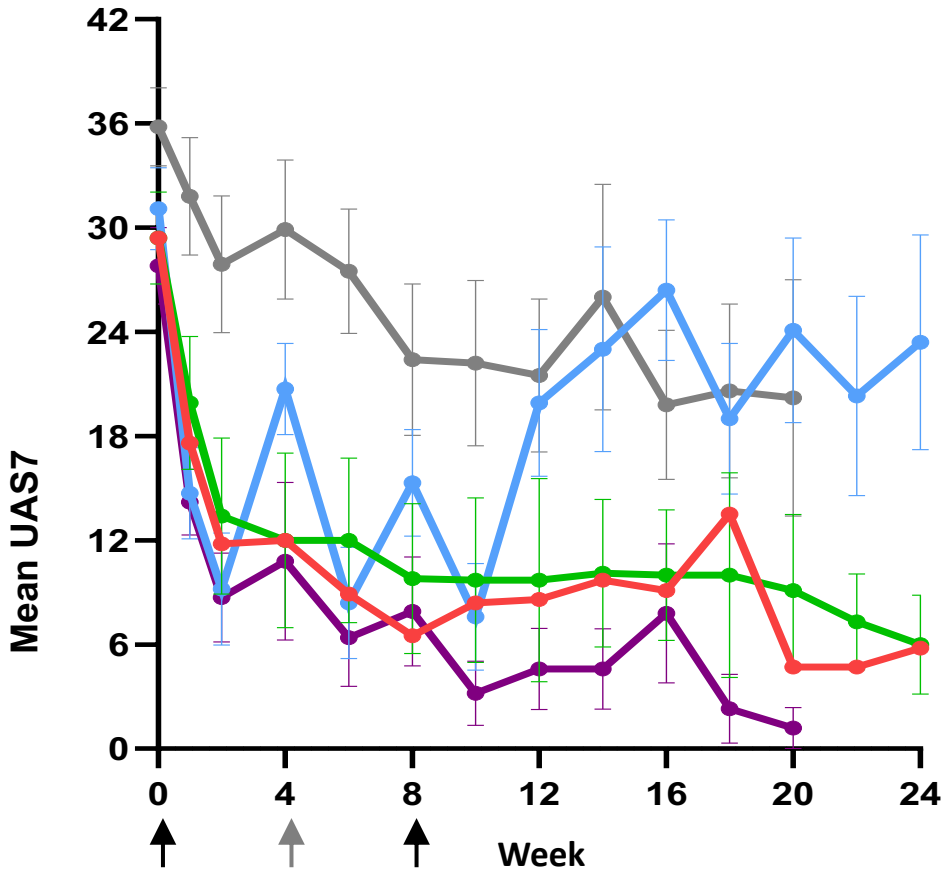
Characteristics		Barzolvolimab 0.5 mg/kg Q4W (N= 9)	Barzolvolimab 1.5 mg/kg Q4W (N= 8)	Barzolvolimab 3.0 mg/kg Q8W (N= 9)	Barzolvolimab 4.5 mg/kg Q8W (N= 9)	All Barzolvolimab (N= 35)	Pooled Placebo (N= 10)
Age years		43.8 (21 - 73)	53.3 (29 - 75)	49.4 (26 - 65)	51.1 (29 - 68)	49.3 (21 - 75)	49.8 (18 - 70)
Gender	Female, n (%)	6 (67)	7 (88)	6 (67)	9 (100)	28 (80)	7 (70)
Race n (%)	White	6 (67)	7 (88)	9 (100)	7 (78)	29 (83)	7 (70)
	African American	3 (33)	1 (13)	0 (0)	1 (11)	5 (14)	3 (30)
	Other	0 (0)	0 (0)	0 (0)	1 (11)	1 (3)	0 (0)
BMI kg/m^2		31.1 (26.0 - 36.0)	37.8 (28.6 - 58.9)	29.4 (22.3 - 36.9)	27.1 (21.5 - 34.4)	31.2 (21.5 - 58.9)	31.8 (16.4 - 55.2)
CSU Duration years		7.5 (0.6 - 41.1)	17.1 (2.6 - 61.3)	4.8 (0.6 - 21.3)	10.4 (1.0 - 35.4)	9.7 (0.6 - 61.3)	5.6 (1.4 - 13.1)
Prior Angioedema n (%)		5 (56)	5 (63)	5 (56)	6 (67)	21 (60)	5 (50)
Prior Omalizumab* n (%)		4 (44)	3 (38)	4 (44)	2 (22)	13 (37)	6 (60)
UAS7		31.1 (20.0 - 39.0)	29.4 (20.0 - 40.6)	29.4 (16.3 - 42.0)	27.8 (17.5 - 38.0)	29.4 (16.3 - 42.0)	35.8 (19.0 - 42.0)
ISS7		15.7 (11.0 - 21.0)	15.5 (12.0 - 21.0)	14.6 (1.2 - 21.0)	15.4 (10.5 -19.0)	15.3 (1.2 - 21.0)	19.3 (12.0 - 21.0)
HSS7		15.4 (8.0 - 21.0)	14.0 (8.0 - 21.0)	14.8 (8.0 - 21.0)	12.4 (7.0 -19.0)	14.1 (7.0 - 21.0)	16.5 (7.0 - 21.0)
UCT		1.7 (0 - 4)	2.4 (1- 8)	3.1 (0 - 7)	4.7 (1 -12)	3.0 (0 - 12)	3.4 (0 - 11)
Tryptase ng/mL		5.0 (2.0 - 10.3)	6.3 (2.8 - 15.1)	8.6 (3.3 - 28.8)	5.5 (2.3 - 10.2)	6.2 (2.0 - 28.8)	5.3 (3.2 - 7.5)
Total IgE (kU/L)		80 (2 - 239)	161 (13 - 328)	337 (4 - 1371)	88 (2 - 307)	165 (2 - 1371)	161 (5 - 409)

Mean (range) is presented unless otherwise indicated, *The majority had inadequate response to omalizumab

Barzolvolimab Drives Rapid and Durable Symptom Improvement in Anti-histamine Refractory CSU Patients

- The 1.5 mg/kg, 3.0 mg/kg and 4.5 mg/kg dose groups showed similar markedly improved urticaria symptoms and disease control with sustained durability up to 24 weeks

Mean UAS7 Over Time



Change in UAS7 At Week 12 (all doses), Week 24 (1.5 mg/kg, 3.0 mg/kg) and Week 20 (4.5 mg/kg)

UAS7 Change	0.5 mg/kg Q4W Week 12	1.5 mg/kg Q4W Week 12 / 24	3.0 mg/kg Q8W Week 12 / 24	4.5 mg/kg Q8W Week 12 / 20 (Additional follow up ongoing)	Placebo Week 12
Mean Score Change	-11	-18 / -23	-21 / -23	-23 / -30	-14
Mean % Change	-40%	-67% / -80%	-67% / -70%	-82% / -97%	-37%

0.5 mg/kg Q4W
1.5 mg/kg Q4W
Placebo
3.0 mg/kg Q8W
4.5 mg/kg Q8W

Dosing for all treatment groups

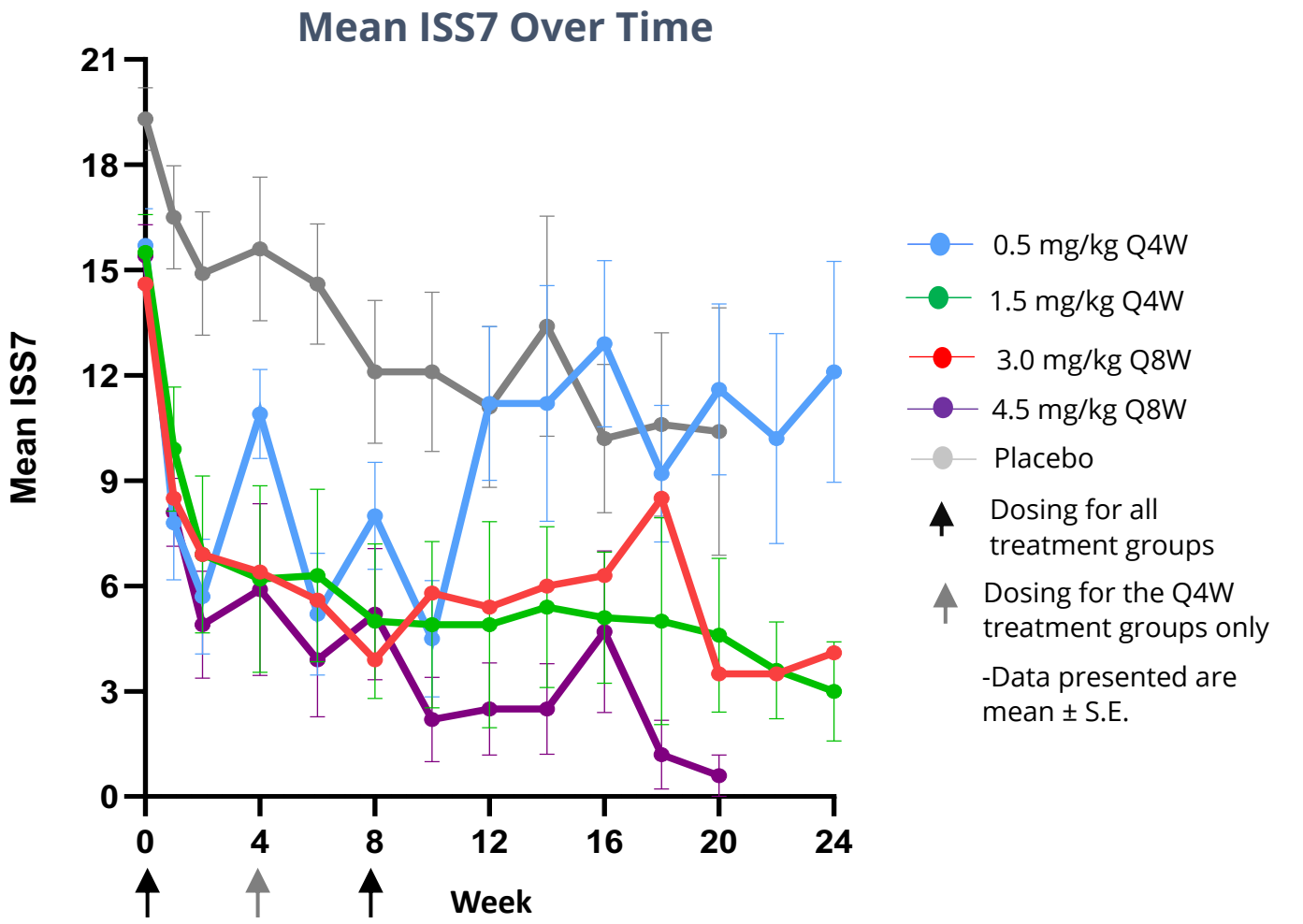
Dosing for the Q4W treatment groups only

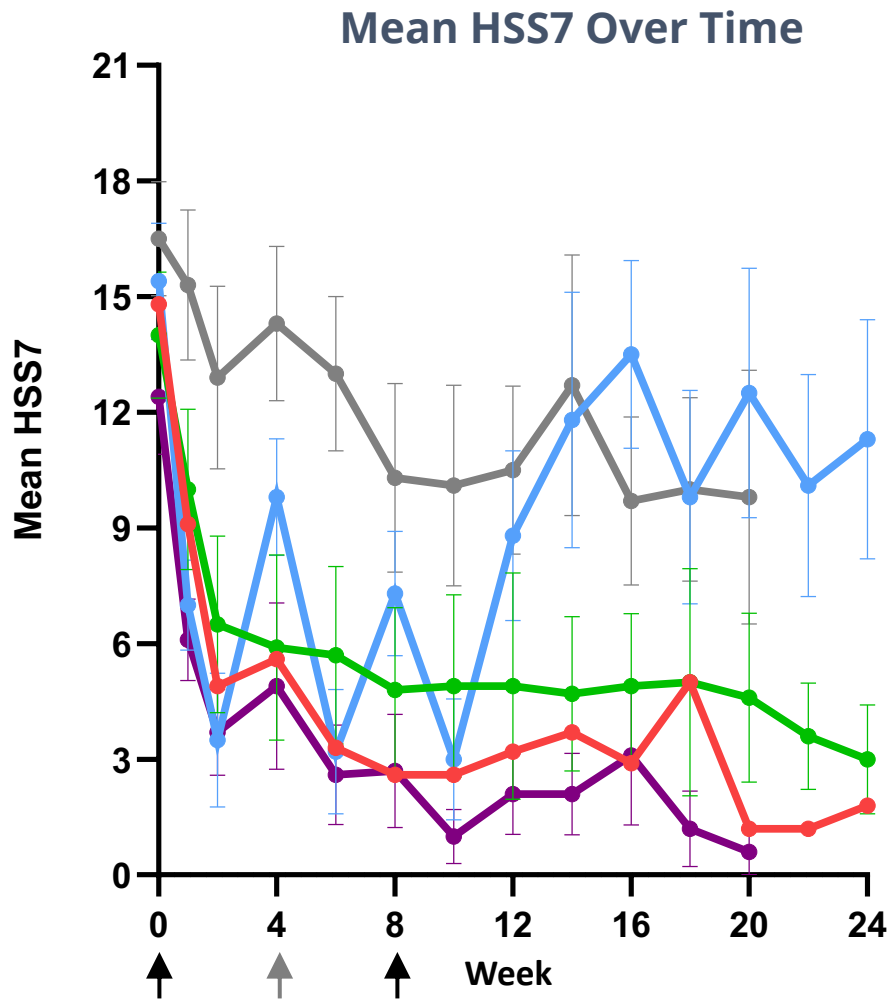
-Data presented are mean ± S.E.

UAS7 score is calculated as the sum over 7 days of the daily intensity of itch (ISS7 itch severity score) & the number of hives (HSS7 hives severity score). Total range of 0–42 with higher scores denoting greater disease activity

Rapid and Durable Improvement in Both Itch and Hives

- Dramatic improvements in itch (ISS7) and hives (HSS7) resolution
- Rapid onset of responses after initial dosing and sustained durability were observed; onset as early as 1 week after the first dose and prolonged symptom control in some patients for up to 24 weeks

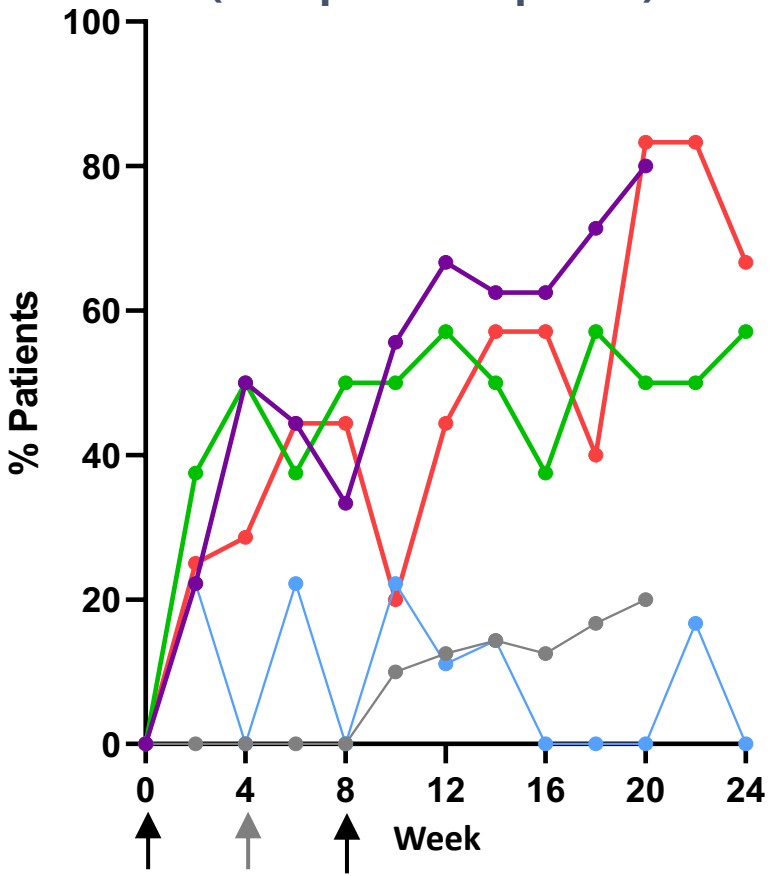




Barzolvolimab Resulted in More Durable Responses by UAS7 at Doses ≥ 1.5 mg/kg

- During post-treatment follow up, 7 of 8 (88%) patients who had been treated with barzolvolimab 1.5 mg/kg or 3.0 mg/kg and had a complete response at week 12 maintained their complete response through 24 weeks
- Current standard of care, omalizumab, has demonstrated 36% complete response per US label

% of All Patients with UAS7 = 0 (Complete Response)



% of All Patients with UAS7=0 At Week 12 (all doses), Week 24 (1.5 mg/kg, 3.0 mg/kg) and Week 20 (4.5 mg/kg)

0.5 mg/kg Q4W Week 12	1.5 mg/kg Q4W Week 12 / 24	3.0 mg/kg Q8W Week 12 / 24	4.5 mg/kg Q8W Week 12 / 20 (Additional follow up ongoing)	Placebo Week 12
11%	57% / 57%	44% / 67%	67% / 80%	13%

0.5 mg/kg Q4W
1.5 mg/kg Q4W
Placebo
3.0 mg/kg Q8W
4.5 mg/kg Q8W

Dosing for all treatment groups

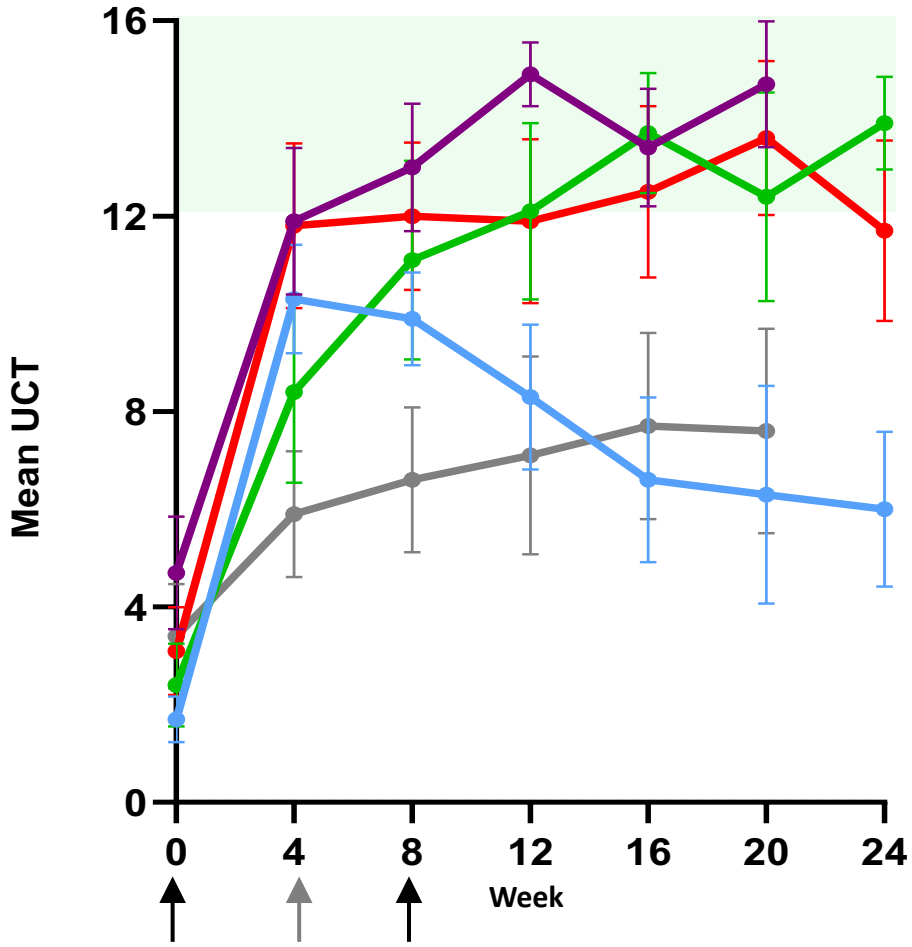
Dosing for the Q4W treatment groups only

-Data presented are mean ± S.E.

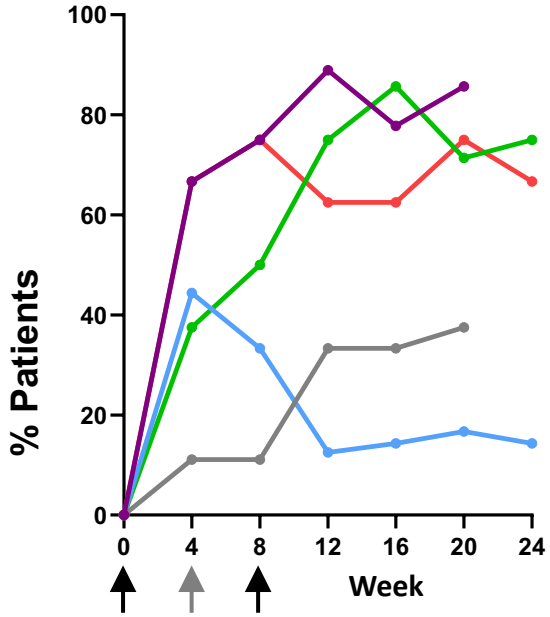
Greater Urticaria Disease Control (UCT ≥ 12) with Barzolvolimab Doses ≥ 1.5 mg/kg

- Well-controlled disease (UCT≥ 12) at week 12 of 75% in the 1.5 mg/kg dose group, 63% in the 3.0 mg/kg dose group and 89% in the 4.5 mg/kg dose group

Mean UCT Over Time



% of All Patients with UCT ≥ 12 (Well-controlled)



% of All Patients with UCT ≥ 12
At Week 12 (all doses), Week 24 (1.5 mg/kg, 3.0 mg/kg) and Week 20 (4.5 mg/kg)

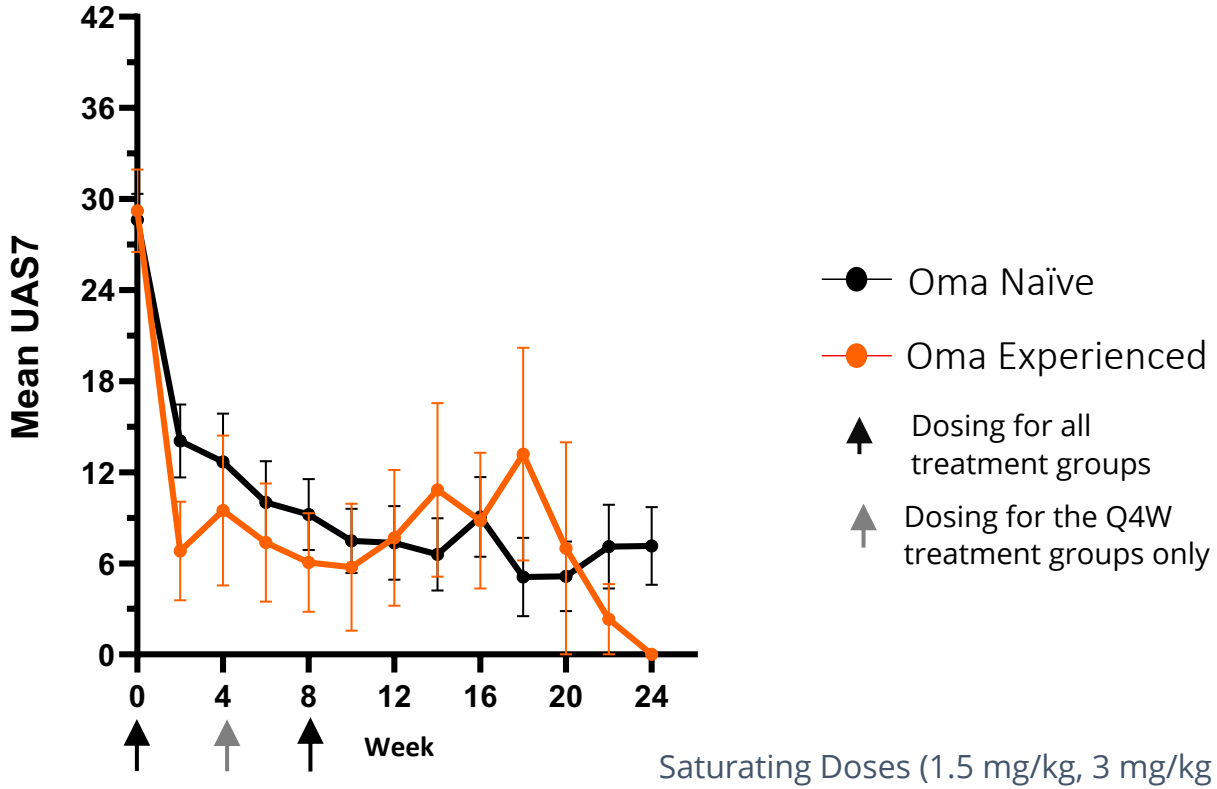
0.5 mg/kg Q4W Week 12	1.5 mg/kg Q4W Week 12 / 24	3.0 mg/kg Q8W Week 12 / 24	4.5 mg/kg Q8W Week 12 / 20 (Additional follow up ongoing)	Placebo Week 12
13%	75% / 75%	63% / 67%	89% / 86%	33%

UCT has 4 items with 5 answer options (scored with 0-4 points); recall period of 4 weeks. Low points indicate high disease activity and low disease control. The minimum and maximum UCT scores are 0 and 16, with 16 points indicating complete disease control and ≥12 indicating well controlled disease

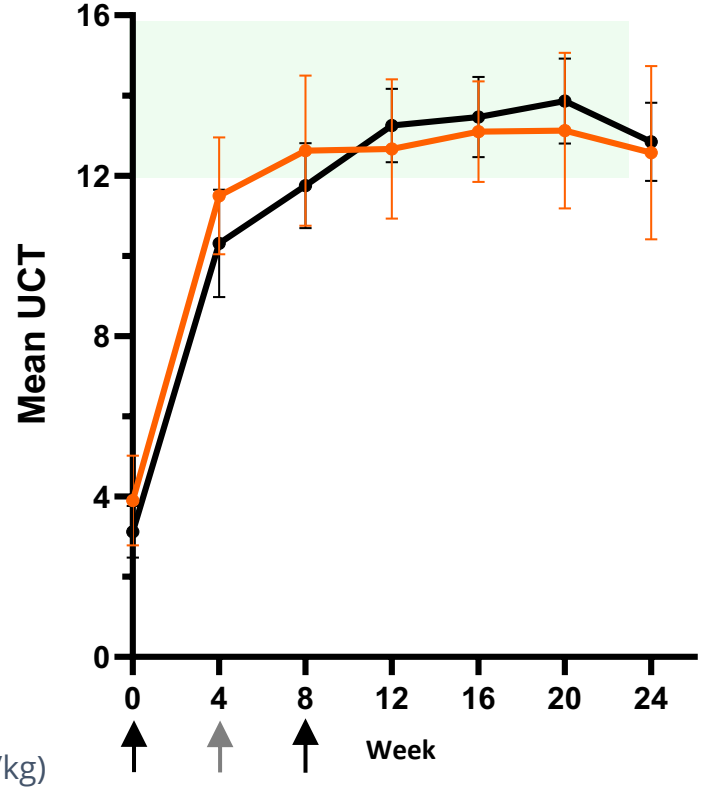
Robust Clinical Activity Observed in Both Omalizumab Experienced and Naïve Patients

- 37% of treated patients had prior omalizumab therapy and still had similar clinical benefit improvement as the overall population; clinical benefit was consistent across omalizumab naive, experienced and refractory patient populations
- 19 patients received prior treatment with omalizumab; 11 of these patients were omalizumab refractory which is defined as inadequate response and/or intolerant
- 4 of 5 omalizumab refractory patients treated at ≥ 1.5 mg/kg doses achieved a complete response by UAS7

Prior Oma Experienced Patients UAS7



Prior Oma Experienced Patients UCT

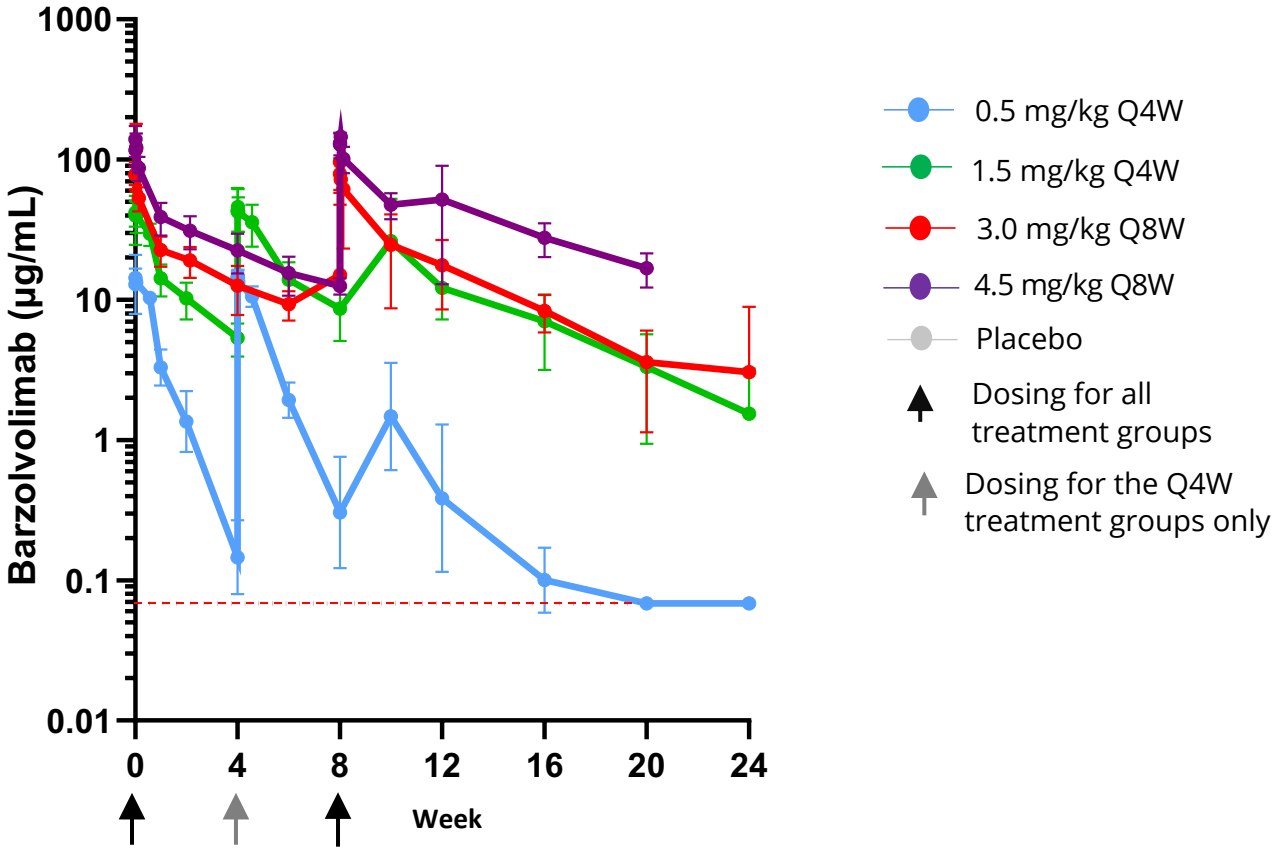


Saturating Doses (1.5 mg/kg, 3 mg/kg and 4.5 mg/kg)

Prolonged Barzolvolimab Exposure and Tryptase Suppression Achieved at Doses ≥ 1.5 mg/kg

- Tryptase suppression, indicative of mast cell depletion, paralleled symptom improvement, demonstrating the impact of mast cell depletion on CSU disease activity

Pharmacokinetics

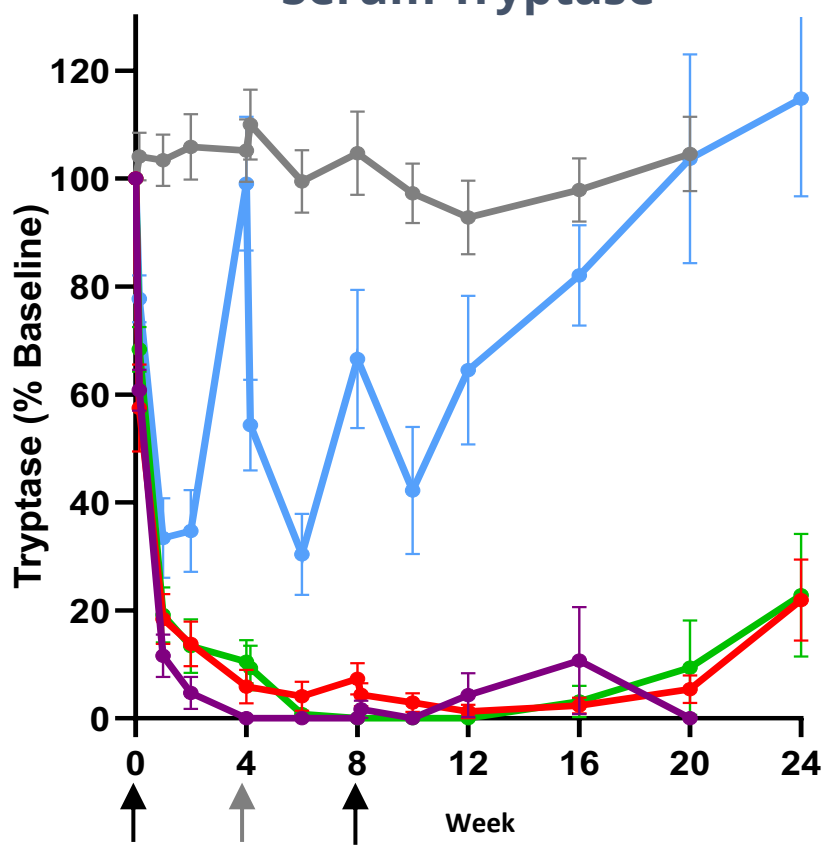


0.5 mg/kg Q4W
1.5 mg/kg Q4W
3.0 mg/kg Q8W
4.5 mg/kg Q8W
Placebo
Dosing for all treatment groups
Dosing for the Q4W treatment groups only

Data presented are geomean ± geoSD

---- Lower limit of quantitation

Serum Tryptase



- Tryptase values below lower limit of detection normalized to 0

Multiple IV Doses of Barzolvolimab Were Well Tolerated

- Most AEs were mild or moderate in severity and resolved while on study
- The most common treatment emergent adverse events were hair color changes, COVID-19, headache, neutropenia and urinary tract infections (UTIs)
- UTIs and COVID-19 were reported as unrelated to treatment. There was one serious adverse event of salmonella gastroenteritis which was also not related to study therapy

Adverse Events Reported in ≥ 10% Barzolvolimab Treated Patients

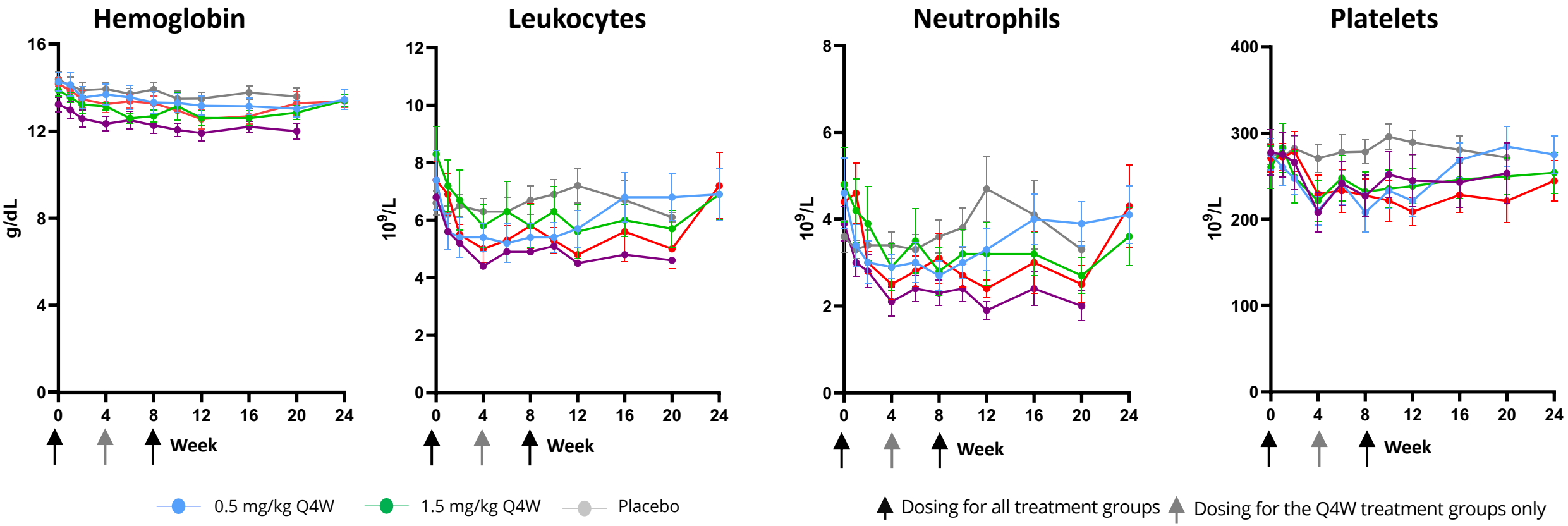
	Barzolvolimab 0.5 mg/kg Q4W (N= 9)	Barzolvolimab 1.5 mg/kg Q4W (N= 8)	Barzolvolimab 3.0 mg/kg Q8W (N= 9)	Barzolvolimab 4.5 mg/kg Q8W (N= 9)	All Barzolvolimab (N= 35)	Pooled Placebo (N= 10)
Any AE	8 (89)	7 (88)	9 (100)	6 (67)	30 (86)	5 (50)
Hair Color Changes	0 (0)	1 (13)	3 (33)	4 (44)	8 (23)	0 (0)
COVID-19	0 (0)	1 (13)	2 (22)	2 (22)	5 (14)	0 (0)
Headache	2 (22)	0 (0)	2 (22)	1(11)	5 (14)	1 (10)
Neutropenia	2 (22)	2 (25)	1 (11)	0 (0)	5 (14)	0 (0)
Urinary Tract Infection*	1 (11)	2 (25)	2 (22)	0 (0)	5 (14)	0 (0)

*Includes preferred terms: urinary tract infection, cystitis, and bacteriuria

Key Hematology Parameters Similar to Those Observed in Previously Reported Single Dose Studies

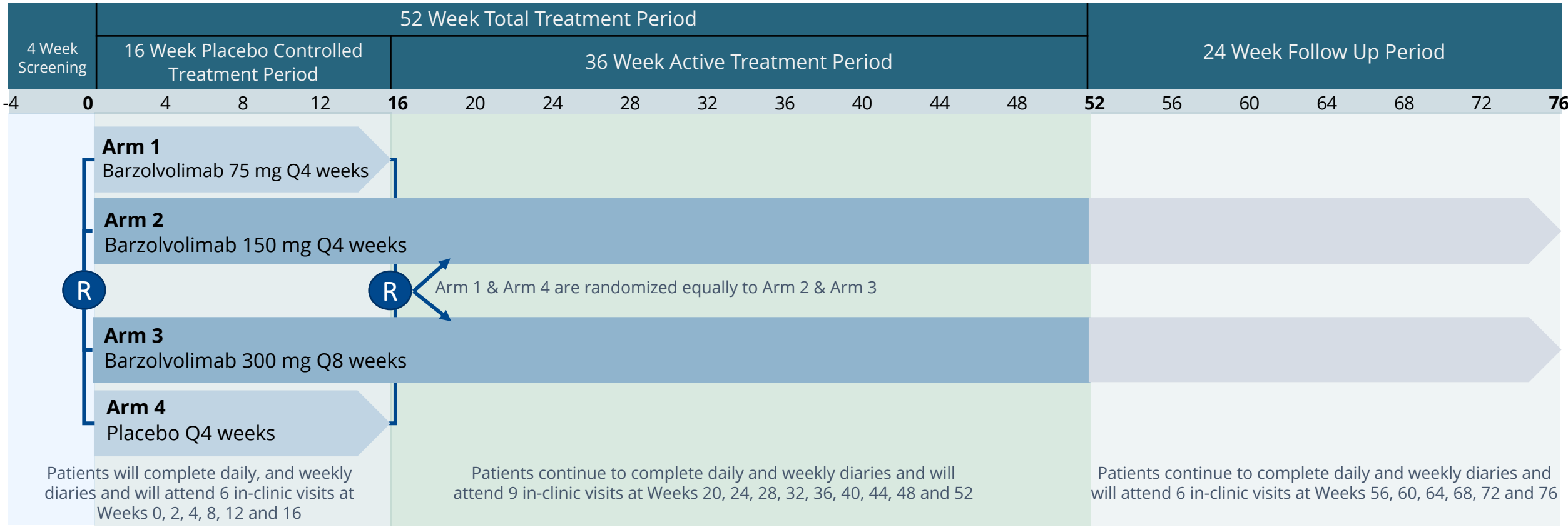
- Changes in key hematology parameters were similar to those observed in previously reported single dose studies, with no pattern of further decreases with multiple doses; hematology parameters generally remained within the normal range
- Generally transient, asymptomatic decreases in neutrophils were reported as AEs for five patients; four of which were previously reported in the EAACI 2022 data presentation

Key Hematology Parameters Over Time



-Data presented are mean ± S.E.

Phase 2 Dose-finding Subcutaneous Barzolvolimab Trial Design
CSU Patients Refractory to Antihistamines



Trial Size: ~168 patients total, 4 arms (42 patients per arm)
~75 sites, ~10 countries

Population: CSU patients refractory to antihistamines; open to biologic naive & experienced patients

Design: Randomized, Double-Blind, Placebo-Controlled, Dose-finding Study

Primary Endpoints:
Mean change from baseline to Week 12 of UAS7 (Urticaria Activity Score)

Secondary Endpoints:
ISS7 (Itch Severity Score)
HSS7 (Hives Severity Score)
AAS7 (Angioedema Activity Score)
Safety

Celldex therapeutics

Questions