ACELYRIN

Accelerating Medicines to Transform Patients' Lives

Q2 2024 Financial Results
August 13, 2024

Forward Looking Statements & Disclaimer

This presentation contains statements that are not of historical facts, considered forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements include, but are not limited to, statements about our expectations regarding the potential benefits, effectiveness, and safety of our product candidates including with respect to lonigutamab's potential for its composition and subcutaneous administration to provide for sustained and/or improved treatment over time, or potential for a longer-term treatment duration and generally well-tolerated safety profile; izokibep's ability to offer clinically meaningful, differentiated benefits, and/or deepening of response over time, and its safety profile; our expectations with regard to our research, development and regulatory plans, including the design (including, potentially registrational design) of preclinical and clinical trials, anticipated commencement of trials, the timing and availability of data from such trials, and the timing or likelihood of regulatory filings and approvals for our product candidates; our expectations with regard to our ability to explore selective pipeline expansion opportunities; the potential market size and size of the potential patient populations for our product candidates and any future product candidates and those indications we target; our expectations about our ability to maintain existing, and establish new, strategic collaborations, licensing, or other arrangements; the scope of protection we are able to establish and maintain for intellectual property ("IP") rights covering our product candidates and any future product candidates; our business strategy; and our future results of operations and financial position.

Such forward-looking statements reflect the current views of ACELYRIN with respect to future events, and are subject to known and unknown risks (including, without limitation, business, regulatory, economic and competitive risks), uncertainties, assumptions and contingencies about ACELYRIN, including, without limitation, those associated with: ACELYRIN's successful completion of development and regulatory activities for its product candidates, including the risk that future clinical trial results could differ materially and adversely from early clinical trial results and other data, and the risk that the U.S. Food and Drug Administration may not agree with ACELYRIN's planned registrational program for lonigutamab and may ultimately require more Phase 3 clinical trials prior to any regulatory submissions or approval; ACELYRIN's ability to achieve projected cost savings in connection with the suspension of further internal investment in the development of izokibep development in HS, PsA and AxSpA, and the corporate restructuring, and the potential failure to realize the expected benefits of the foregoing and unintended consequences from the foregoing that may impact ACELYRIN's business; maintaining and defending IP protection; the ability to timely secure adequate supply of its product candidates; and legal proceedings, as well as other risks and uncertainties described under the heading "Risk Factors" in the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2024 filed with the U.S. Securities and Exchange Commission ("SEC") and in subsequent filings made by us with the SEC, which are available on the SEC's website at www.sec.gov.

In light of these risks and uncertainties, many of which are beyond our control, the plans, intentions, expectations or other events described in or implied by our forward-looking statements may not occur. Actual results or events could differ materially and adversely from those expressed in any forward-looking statements. New risks may occur at any time, and we anticipate that subsequent events and developments could cause our views to change. Any reader of this presentation is cautioned not to place undue reliance on these forward-looking statements, which speak to our current beliefs and expectations only as of the date of this presentation. Except as required by law, we disclaim any intention or responsibility for the accuracy and completeness of the forward-looking statements in this presentation, or to update or revise any forward-looking statements in the event of new information, future developments or otherwise.

Our product candidates are currently under preclinical or clinical investigation, and no representation is made as to the safety or effectiveness of our product candidates. In addition to our own internal research and estimates, this presentation contains information related to or based on studies, publications, surveys and other data obtained from third-party sources, including without limitation relating to market size and growth. While we believe these third-party sources to be reliable as of the date of this presentation, we have not independently verified, and make no representation as to the adequacy, fairness, accuracy or completeness thereof. In addition, market data (e.g., market size) involves a number of projections, assumptions, and estimates of our future performance and the future performance of the markets in which we operate. There can be no guarantee of the accuracy or reliability thereof as they are necessarily subject to a high degree of uncertainty and risk.

The information in this presentation is as of the date of this presentation, and is subject to change without notice.

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Today’s Agenda

1. Charting A New Path Forward
   Mina Kim, Chief Executive Officer
2. Announcing Phase 3 Hidradenitis Suppurativa Top line Results
   Shep Mpofu, MD, MRCP, FRCP, Chief Medical Officer
3. Prioritizing Lonigutamab in Thyroid Eye Disease
   Shep Mpofu, MD, MRCP, FRCP, Chief Medical Officer
4. Enabling 3-years of Critical Milestones
   Gil Labrucherie, Chief Financial Officer & Chief Business Officer

Experienced Leadership Team

Successful Track Record of Delivering Some of the Most Transformative Medicines for Patients

Mina Kim
CEO

Gil Labrucherie
CFO & CBO

Shep Mpofu | MD, MRCP, FRCP
CMO

Melanie Gloria
COO

Ken Lock
CCO

Sanam Pangali
CLO & Head of People

Patricia Turney
CTOO

Leaders In Immunology

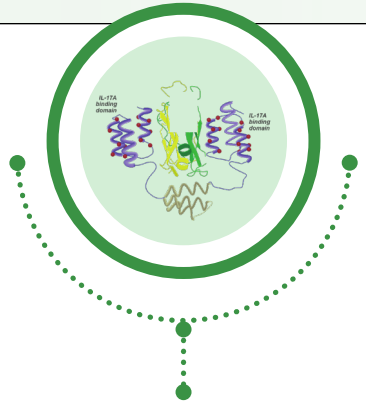
AMGEN · abbvie · HORIZON · NOVARTIS · NEKTAR · GILEAD · zymergen · Pfizer

HUMIRA adalimumab · Skyrizi risankizumab-rzaa · TEPEZZA teprotumumab-trbw · Cosentyx (secukinumab) · RINVOQ upadacitinib · Enbrel etanercept · SILIQ (brodalumab) injection · KRYSTEXXA pegloticase

Board of Directors

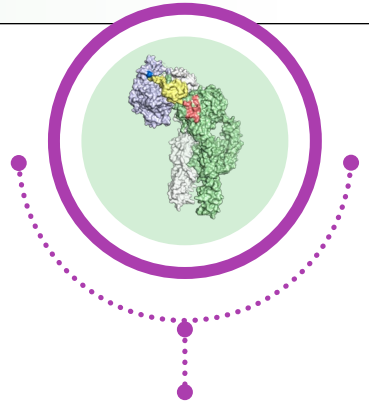
Mina Kim · Bruce C. Cozadd · Dan Becker · Alan Colowick · Henry Gosebruch · Patrick Machado · Beth Seidenberg · Dawn Svoronos · Lynn Tetrault

Following Two Years of Progress, We Are at An Inflection Point



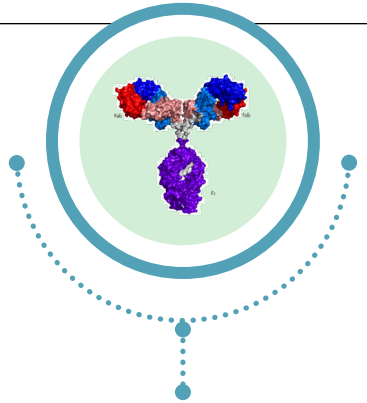
Izokibep (anti IL-17)

- Positive Phase 3 Data in Psoriatic Arthritis
- Positive Phase 3 Data in Hidradenitis Suppurativa



Lonigutamab (anti-IGF-1R)

- Single Ascending Dose Study Completed in Healthy Volunteers
- First SubQ anti-IGF-1R to Demonstrate Proof-of-Concept in TED Patients[1]
- Completing Dose Exploration Phase 2



SLRN-517 (anti-c-KIT)

- Single Ascending Dose Study Completed in Healthy Volunteers

[1]Based on publicly reported data in the U.S. and EU; **TED**, Thyroid Eye Disease

Our Path Forward: Focused Value Creation

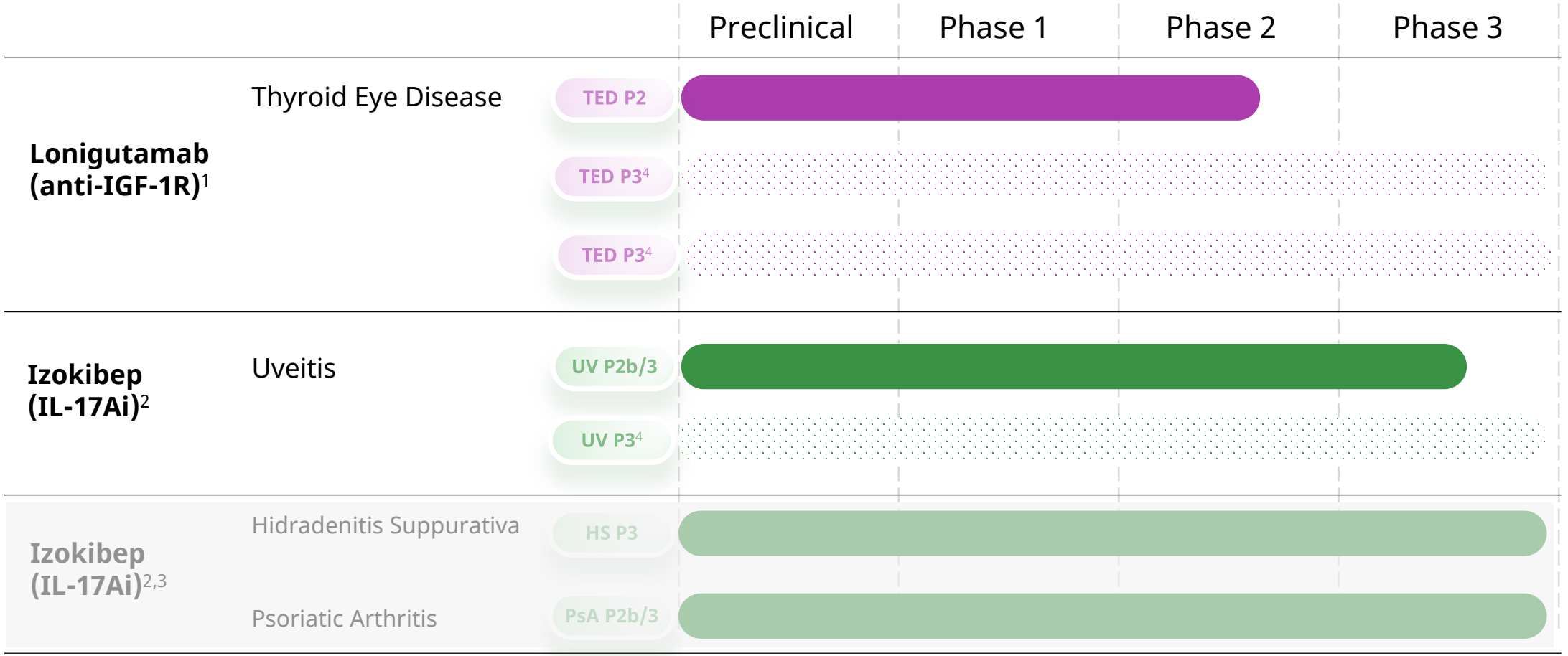
Prioritize Lonigutamab

Prioritizing development of lonigutamab, which has best-in-class potential for thyroid eye disease and a clinical development program right-sized for ACELYRIN.

Disciplined Capital Allocation

Projecting to extend runway to mid-2027 with program prioritization and corporate restructuring - open to selective pipeline expansion opportunities.

Portfolio of Late-Stage Clinical Programs



[1] IGF-1R Inhibitor; Worldwide rights to non-oncology indications. Potential opportunity to extend certain IP protection into 2043.

[2] IL-17A Inhibitor; Excludes (i) development, commercialization and manufacturing rights in mainland China, Hong Kong, Macau, South Korea and Taiwan, and (ii) development rights in certain other Asia Pacific countries including, without limitation, Australia, India, New Zealand and Singapore. We retain decision making authority for izokibep global development. Potential opportunity to extend certain IP protection into early 2040's.

[3] On August 13, 2024, ACELYRIN announced plans to complete these two ongoing trials and suspend new investment in these two indications.

[4] Not yet initiated; denotes trials anticipated to be required for registration in the United States

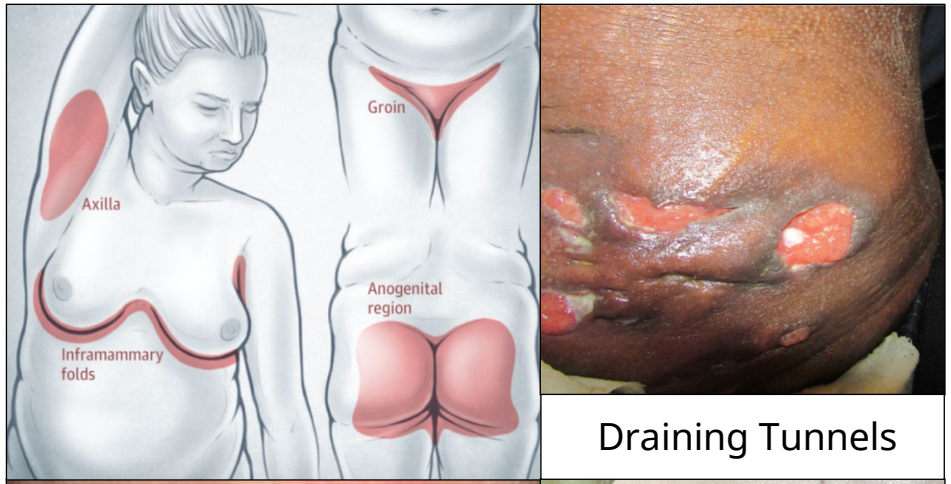
Izokibep:

Phase 3 Hidradenitis Suppurativa Top line Results

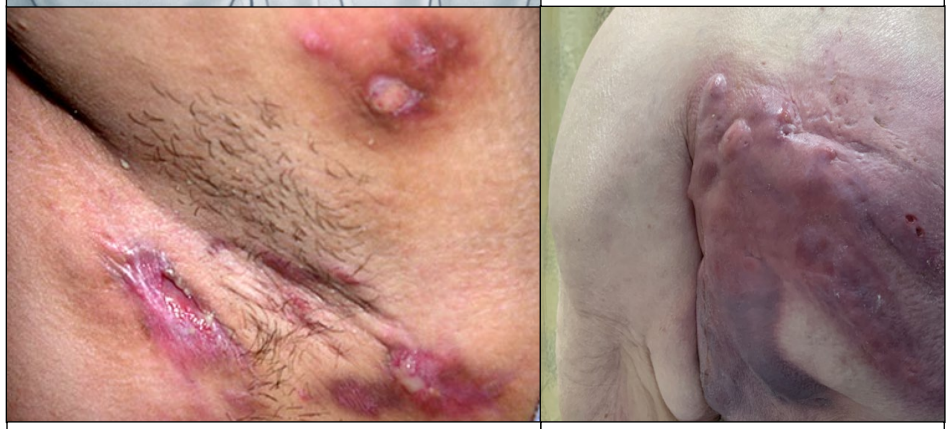
Shep Mpofu, MD, MRCP, FRCP, Chief Medical Officer

Hidradenitis Suppurativa is a Devastating Disease Where Exposures Matter

High Potency and Small Size of Izokibep Could Improve Patient Outcomes



Draining Tunnels



Inflammatory Nodules

Abscesses

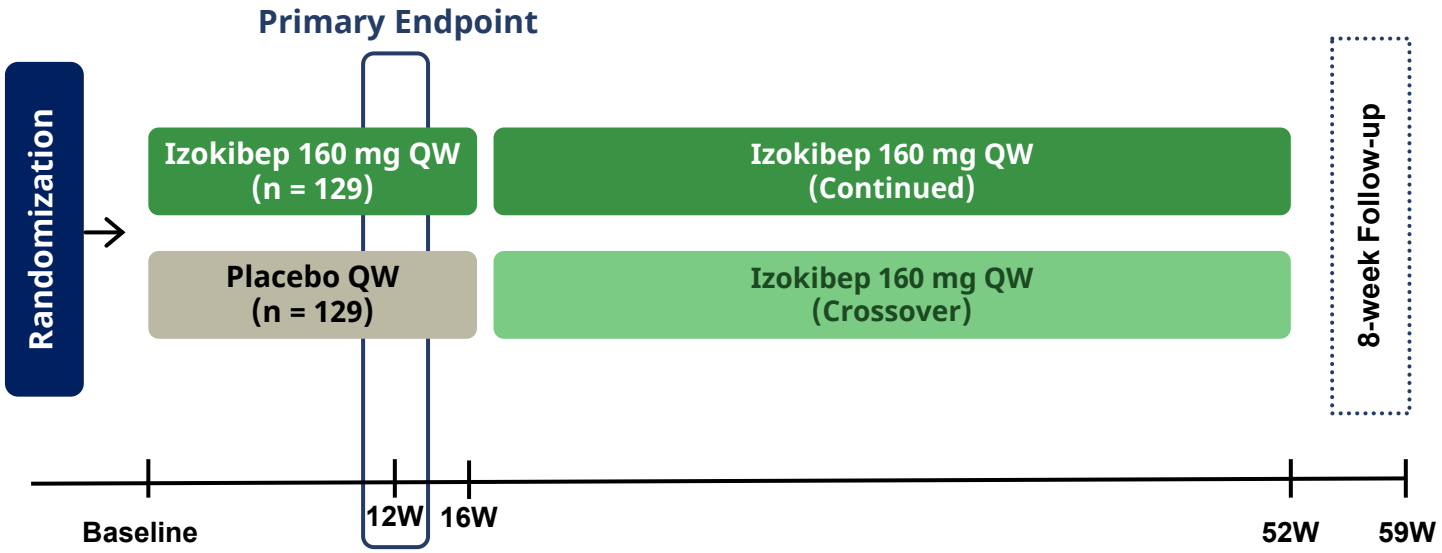
- Chronic Inflammatory disease characterized by skin abscesses, inflammatory nodules, fistulae, scar tissue, malodor and pain, often resulting in permanent disfigurement and social stigma negatively impacting quality of life
- **~370,000 HS patients in the U.S.**; approximately half of patients are considered to have moderate-to-severe disease
- Diagnosis rates are estimated to **increase 1-3% annually**
- **Current therapy options are limited**; more complete and faster resolution of disease symptoms remain an unmet need for patients

Izokibep HS

Izokibep Phase 3 Hidradenitis Suppurativa Trial
Randomized, Double-blind, Placebo-controlled

Screening/ Eligibility

- Moderate-to-severe HS
- HS > 6 months
- HS lesions in ≥2 distinct anatomic areas, one of which is Hurley Stage II or III
- Minimum abscess/nodule (AN) count of 5
- Inadequate response, intolerance or contraindication to oral antibiotics allowed in up to 30% of enrolled patients



Efficacy Endpoints
Primary & secondary endpoints wk 12

- HiSCR75 (primary)

Secondary
- HiSCR90/100/50
- Flares (%)
- DLQI
- AN = 0, 1 or 2 (%)
- Skin Pain 3 pt reduction (%)

Safety Endpoints
All secondary endpoints wk 12

- AEs, SAEs, AESIs
- Safety laboratory, vital signs, physical examination

Exploratory
- Presence of ADAs

Statistical Analysis

- Multiple Imputation
- Use of antibiotics that treat HS imputed as NR
- Stratified by prior TNFi use for HS (Yes/No) and Hurley Stage (II or III)

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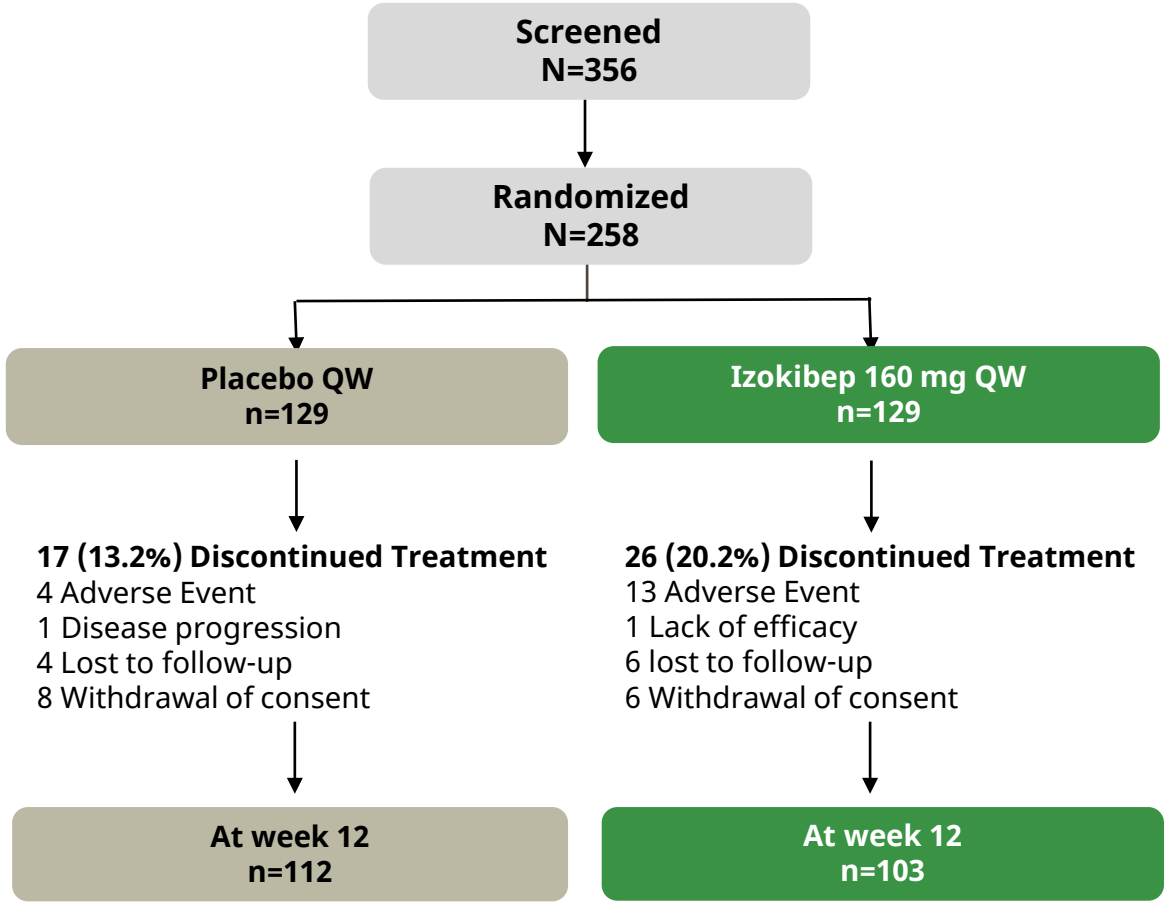
ADA, anti-drug antibodies; **AE,** adverse event;; **AESIs,** adverse events of special interest; **AN**, total abscess and inflammatory nodule count; **HiSCR**, Hidradenitis Suppurativa Clinical Response; **HS,** hidradenitis suppurativa; **QW**, once every week; **SAE**, serious adverse event; **DLQI**, Dermatology Life Quality Index; **TNFi,** tumor necrosis factor inhibitor. Primary endpoint at week 12, Placebo Crossover at 16 wks

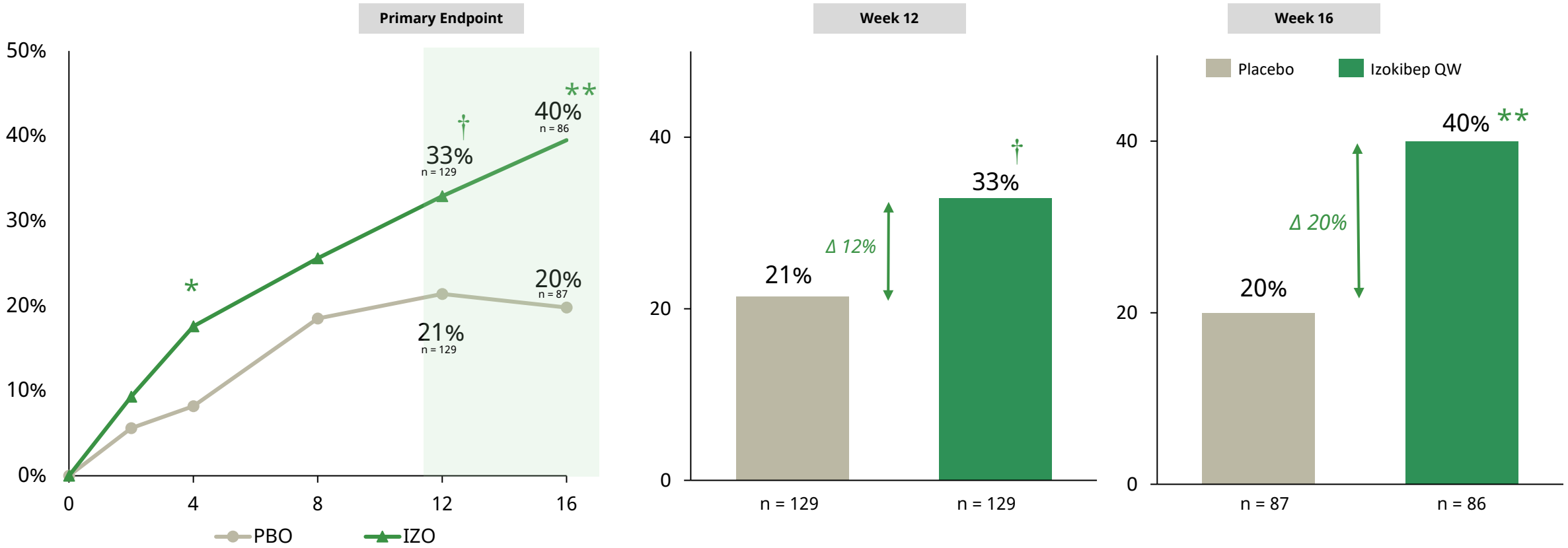
Baseline Characteristics & Patient Disposition Through Week 12

	Overall N = 258	Placebo N = 129	160mg QW N = 129
Mean age (years)	37.3	37.4	37.1
White (%)	69.8	70.5	70.2
Black (%)	19.0	21.7	16.3
Female (%)	69.0	69.0	69.0
Mean BMI	34.0	34.1	34.0
Smoking status current (%)	43.0	45.0	41.1
Mean disease duration (years)	10.2	10.2	10.2
Mean AN count	13.4	13.2	13.5
Mean abscess count	2.5	2.7	2.4
Mean inflammatory nodule count	10.8	10.5	11.1
Mean Draining Tunnels	2.2	2.2	2.2
Hurley Stage (%)			
Stage II	62.0	63.6	60.5
Stage III	38.0	36.4	39.5
Mean DLQI Score	11.9	11.4	12.3
Prior TNFi (%)	14.7	15.5	14.0



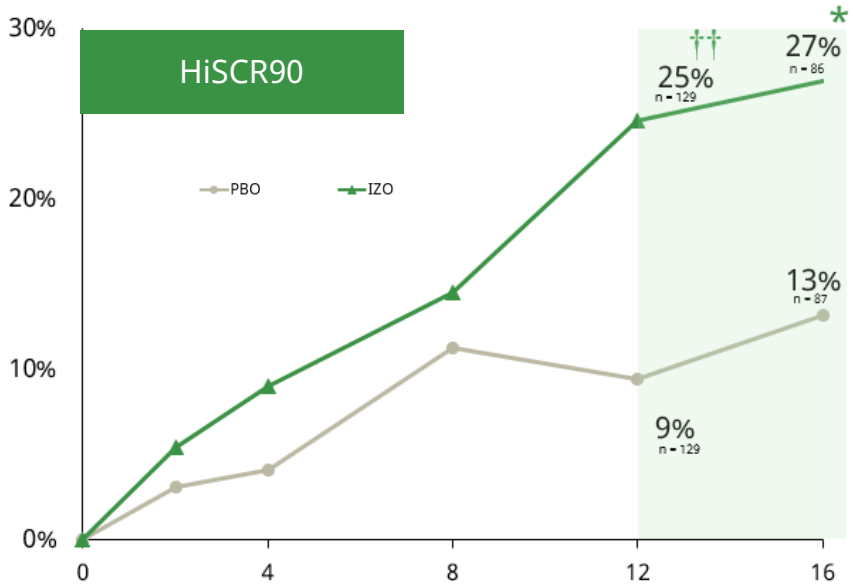
Primary Endpoint : HiSCR75

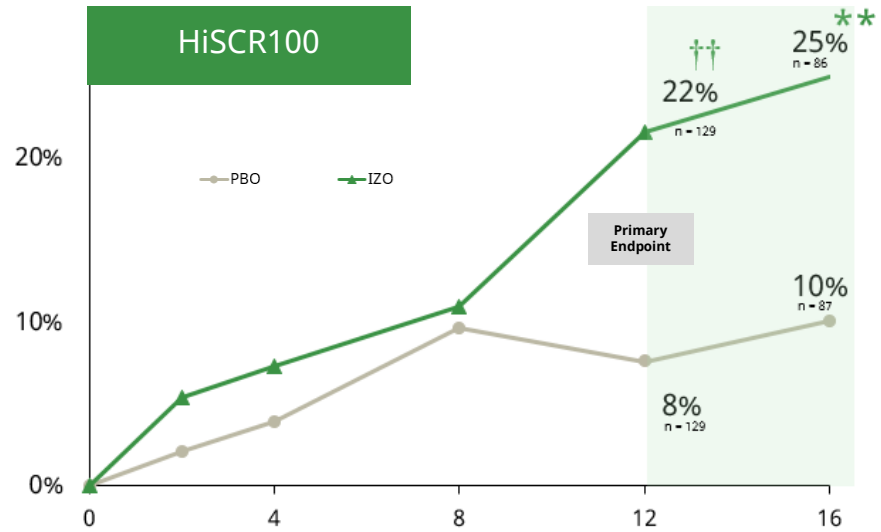
HiSCR75 Week 12 (1) and 16 (2) - Placebo Controlled

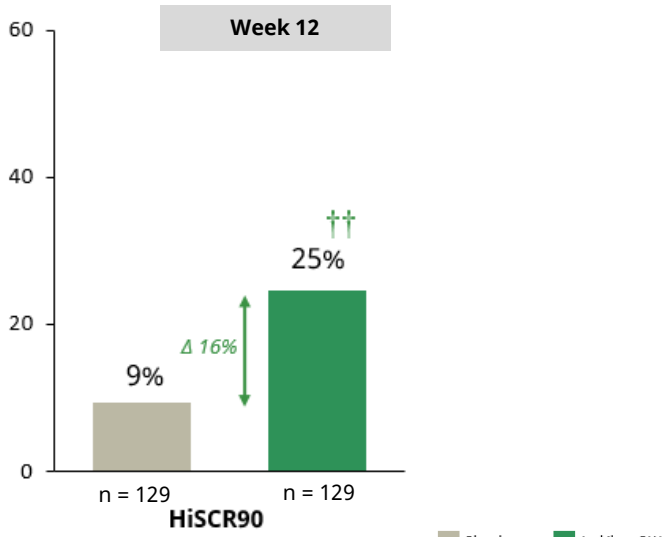


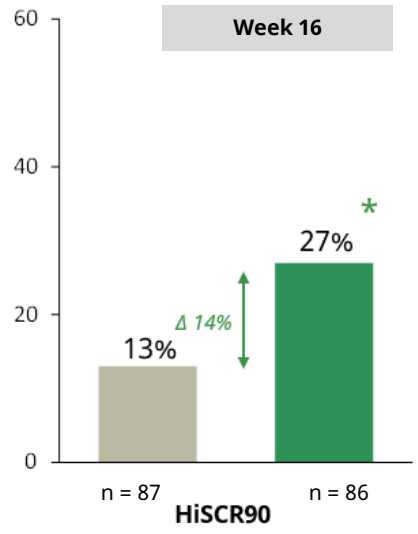
(1) Week 12 data are from the full analysis set (n=129) using prespecified multiple imputation; Significance per prespecified statistical hierarchy: †P<0.05 vs placebo; ††P<0.01 vs placebo
(2) All patients have reached Week 16. Interim Week 16 data using prespecified multiple imputation, of 2/3 of patients (n = 86 active and n = 87 placebo), is presented. This interim data is not necessarily indicative of, and could materially differ from, complete Week 16 results. Nominal p value: *p<0.05 vs placebo; **P<0.005 vs placebo

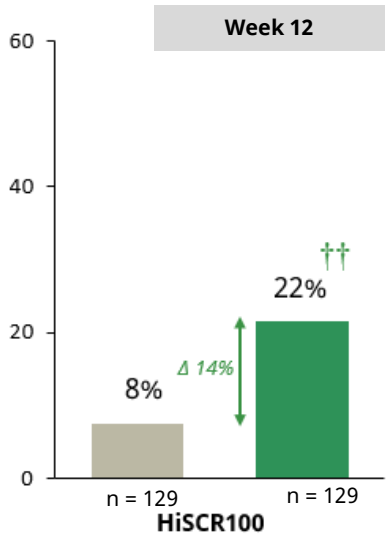
HiSCR90 and HiSCR100 - Week 12 (1) and Week 16 (2) - PBO Controlled

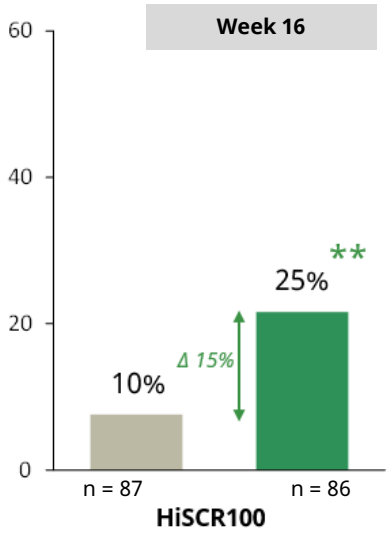












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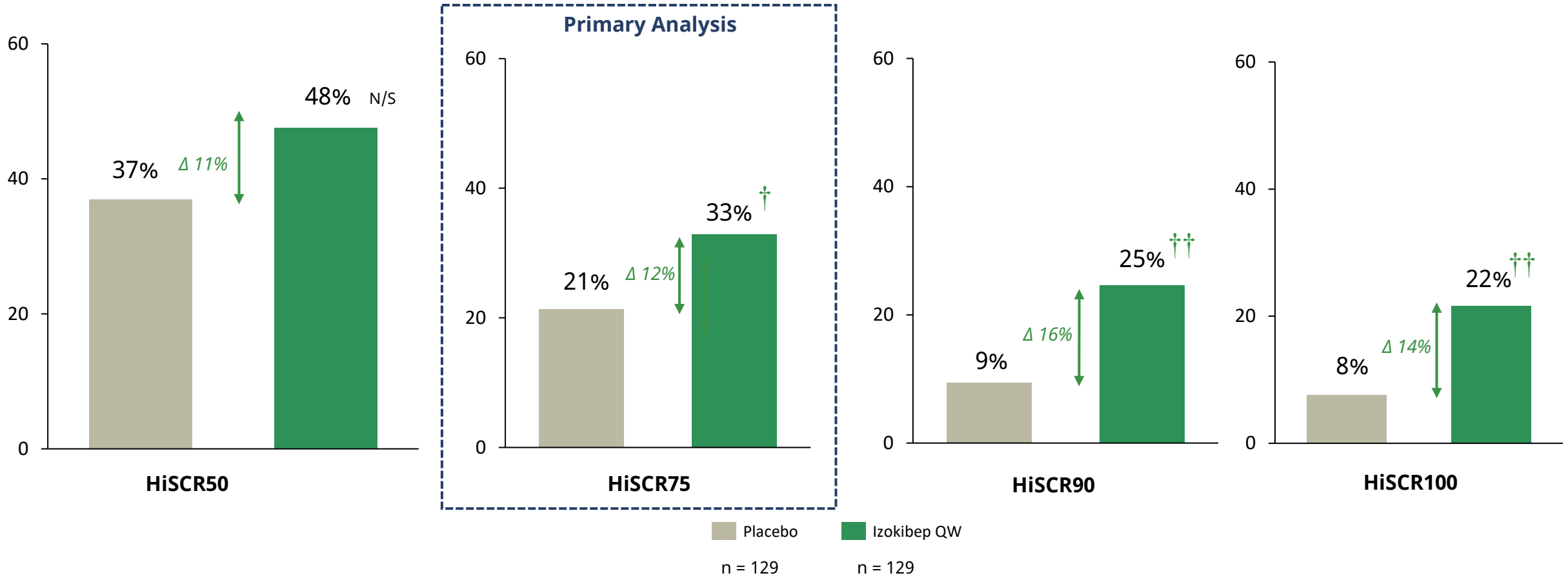
Summary of HiSCR Responses at Week 12

Approx. 1 of 4 Patients achieved HiSCR90/100 by week 12

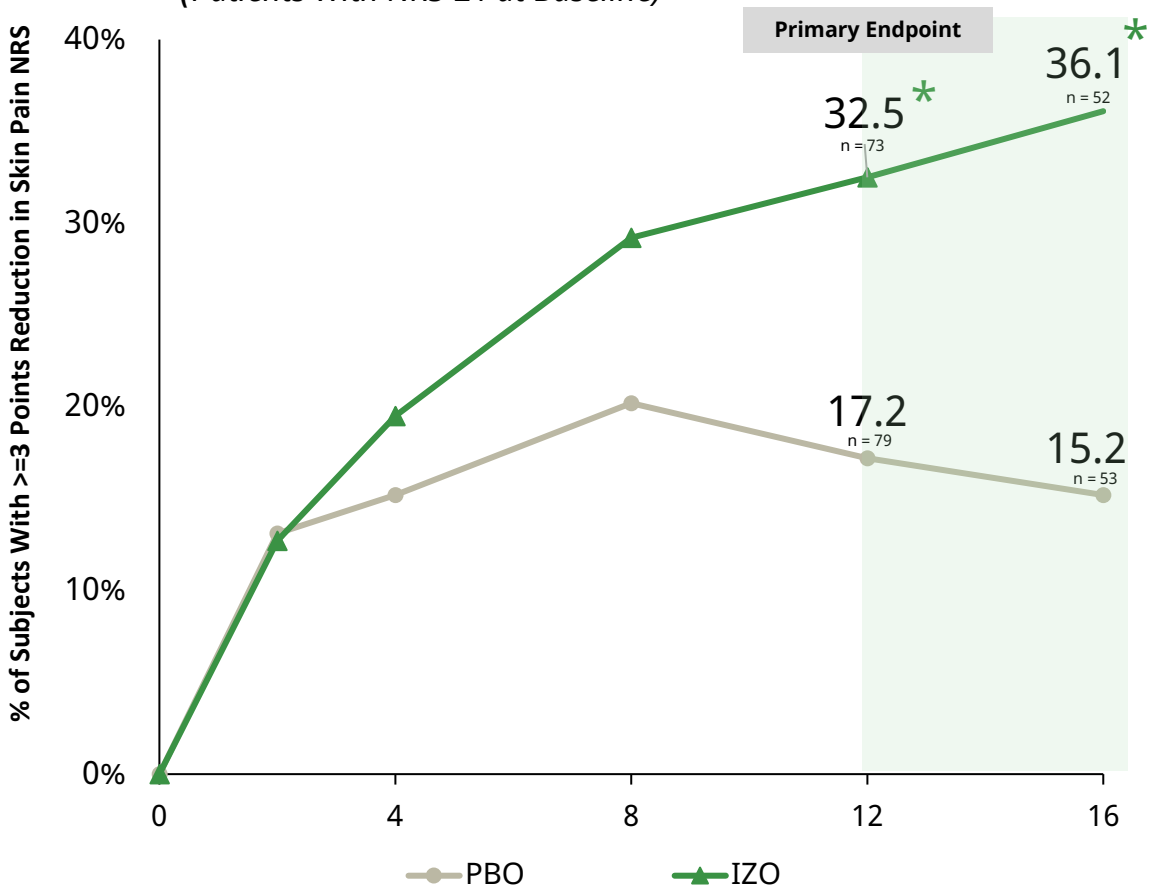


Week 12 data are from the full analysis set using prespecified multiple imputation. Significance per prespecified statistical hierarchy: †P<0.05 vs placebo; ††P<0.01 vs placebo. **N/S,** not significant.

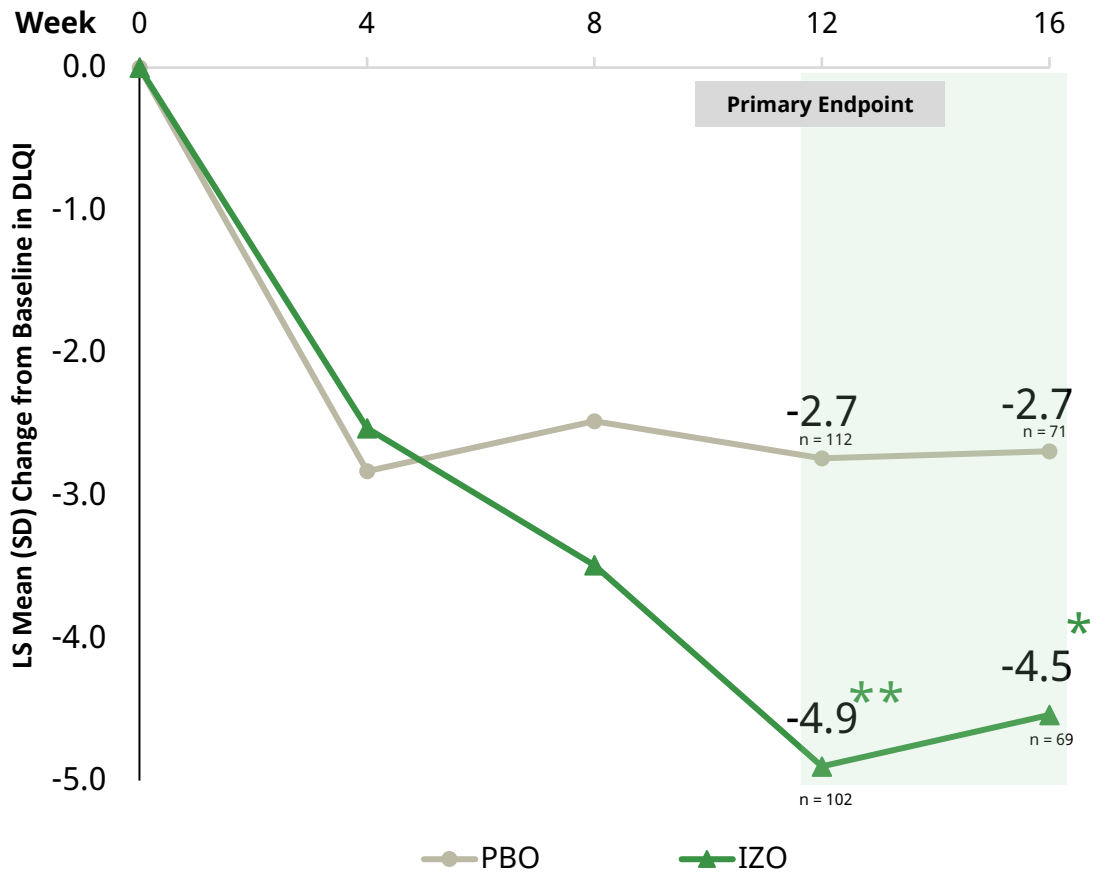
Reduction in Skin Pain and Improvement in DLQI

Skin Pain Reduction Week 12 (1) and 16 (2) - Placebo Controlled

(Patients With NRS ≥4 at Baseline)



DLQI through Week 12 (1) and 16 (2) - Placebo Controlled



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Safety Results at Week 12

	Placebo N = 129 N (%)	160mg QW N = 129 N (%)
Any TEAE	68 (52.7)	102 (79.1)
Serious TEAE	4 (3.1)[1]	1 (0.8)[2]
TEAE leading to discontinuation of study treatment	4 (3.1)	10 (7.8)
Injection Site Reactions leading to discontinuation	0	7 (5.4)
Death	0	0
Infections and Infestations	31 (24)	27 (20.9)
TEAE Preferred Term (≥5%)		
Injection Site Reactions	10 (7.8)	84 (65.1)[4]
Headache	12 (9.3)	13 (10.1)
Nasopharyngitis	9 (7)	9 (7)
Fatigue	3 (2.3)	7 (5.4)
Diarrhea	2 (1.6)	7 (5.4)
AE of Special Interest		
Candidiasis	3 (2.3)[3]	0
Inflammatory bowel disease	0	0
Suicidal ideation behavior	0	0

[1] Abdominal pain, pelvic fracture, hepatic enzyme increased, urinary retention, hidradenitis; [2] Vasculitis ; [3] Two vulvovaginal, one undefined [4]Two injections of 80mg Izokibep administered weekly [5] No new safety findings observed in the preliminary Week 16 data

Lonigutamab:

Thyroid Eye Disease

Shep Mpofu, MD, MRCP, FRCP, Chief Medical Officer

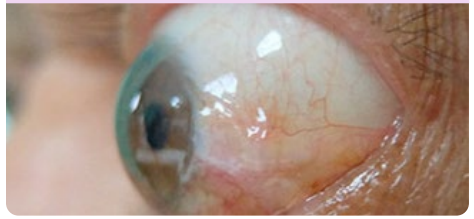
TED: Unmet Needs Persist for Greater Efficacy, Safety & Convenience

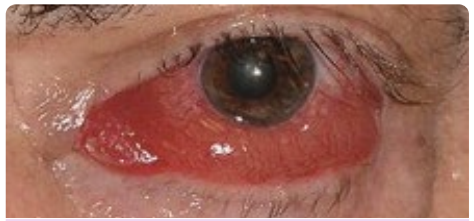
Multifaceted Disease Whose Impact Extends Beyond Visual Disfigurement

TED is a rare debilitating disease with many life-impacting manifestations

- Impacts >100,000 patients in the U.S.
- Characterized by progressive inflammation that can lead to **irreversible damage to tissues around the eye**, threatening vision

Proptosis





Redness

Diplopia

Patient QoL

Opportunities to improve on SoC to positively impact lives of patients living with chronic disease

Rapid & deeper responses across TED manifestations, resulting in **improved patient quality of life**

Minimize or delay retreatment by providing more **durable** responses and **patient-specific** treatment duration

Avoid risk of **serious, potentially long-term AEs** (e.g., hearing impairment) that result from high doses of SoC

Increase **convenience** through at-home **subcutaneous** administration and/or less frequent dosing

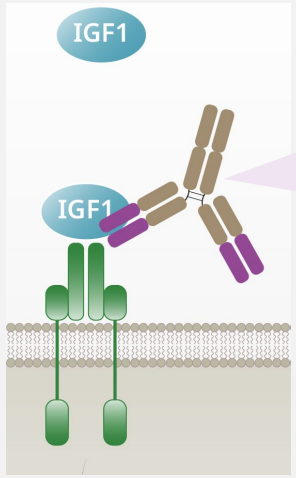
Next Generation Best-In-Class Anti-IGF-1R Designed to Optimize Patient Benefit

High Potency

20-75x more potent than other anti-IGF-1Rs[1,2]

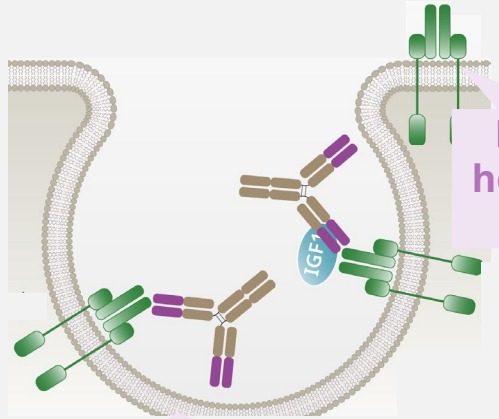
Lower drug exposure

Unique Binding Epitope



Peripheral IGF-1 binding side: does not compete with IGF-1 binding

IGF-1 Internalization



Maintains homeostatic IGF-1

IGF-1 internalization within minutes enables faster kinetics

Potential Patient Benefits

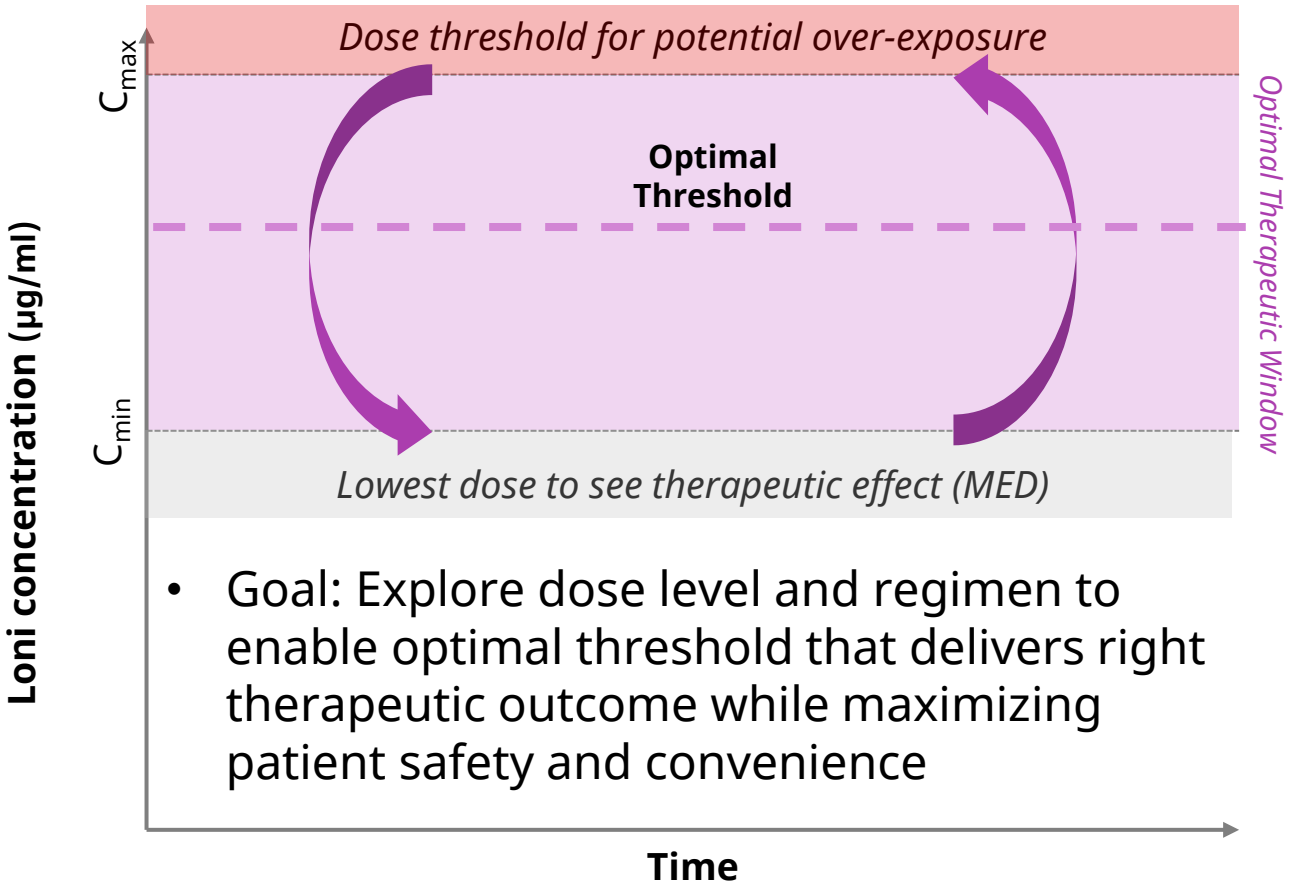
- **Faster Time to Response**
- **Deep & Durable Responses**
- **Minimize Safety Risks**
- **Patient-Centric Convenient Administration**

1. Akla, B. et al. Efficacy of the Antibody–Drug Conjugate W0101 in Preclinical Models of IGF-1 Receptor Overexpressing Solid Tumors. Mol. Cancer Ther. (2020).
2. Data on File

Applying Our Innovative Approach to Clinical Development

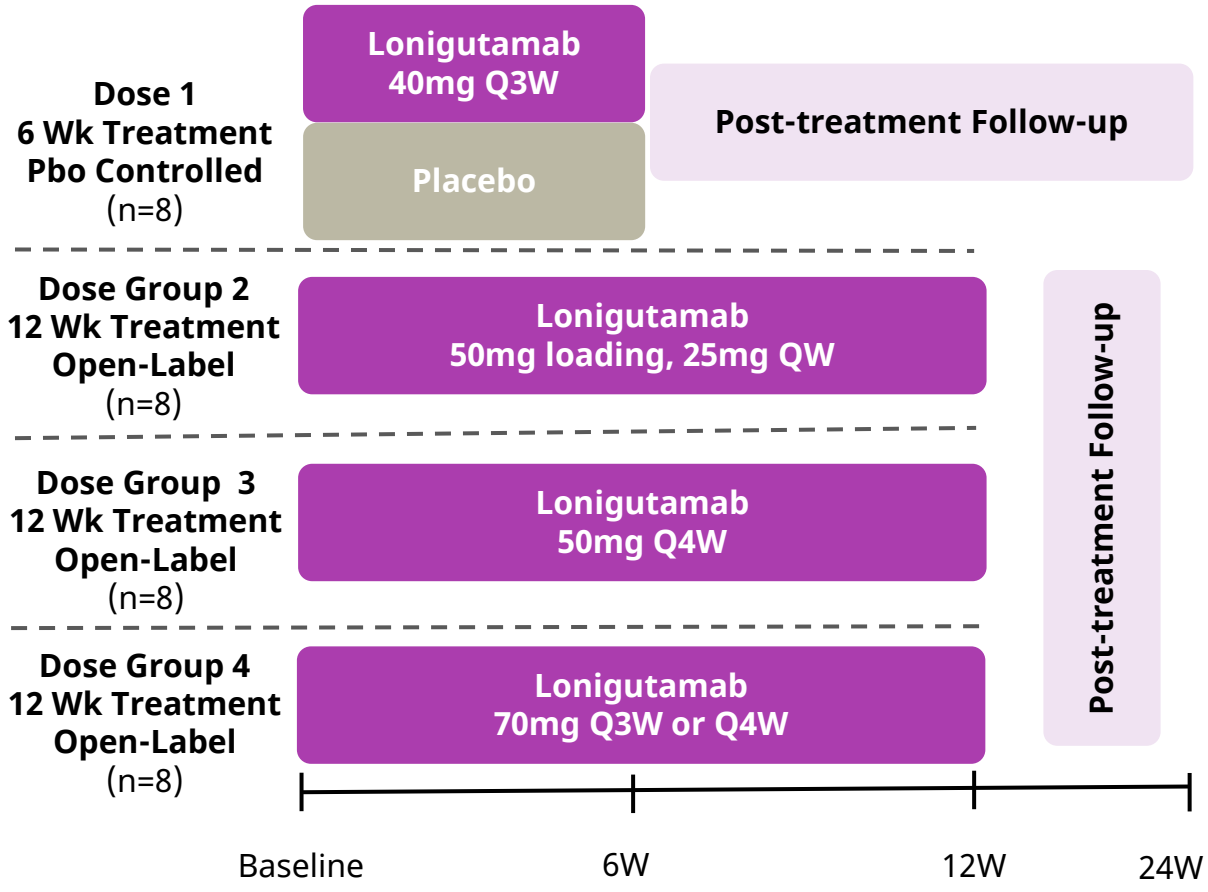
A Patient-Centric Approach Designed to Optimize Benefit-Risk

Iterative & robust approach to optimize anti-IGF-1R dosing…



- Goal: Explore dose level and regimen to enable optimal threshold that delivers right therapeutic outcome while maximizing patient safety and convenience

…targeting an optimal therapeutic benefit



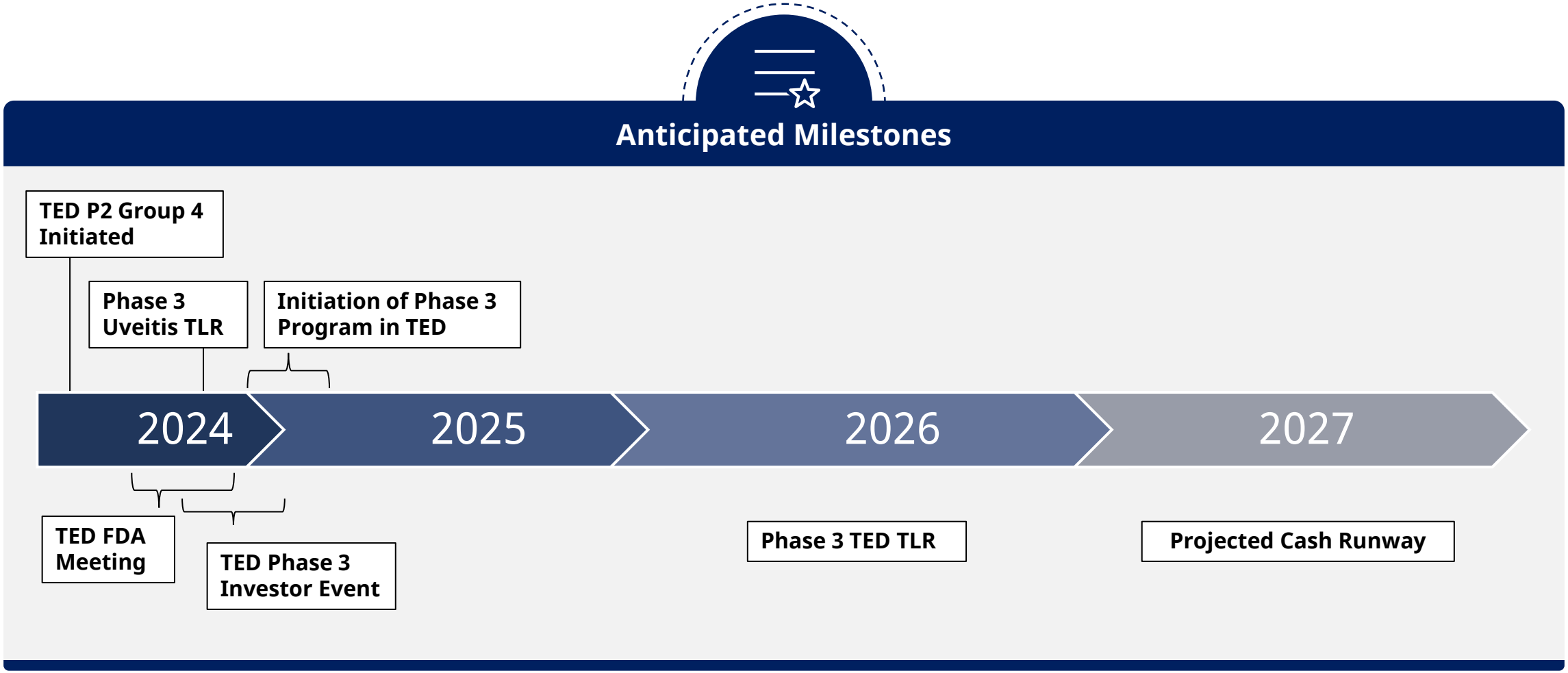
MED, Minimally Effective Dose

Cash Runway and Milestones

Gil Labrucherie, Chief Financial Officer & Chief Business Officer

Strategic Initiatives Enable 3-Year Runway to Mid-2027

Existing ~$635M Projected to Fully Fund Lonigutamab Phase 3 Trials & Potential Pipeline Expansion



Closing Summary

Mina Kim, Chief Executive Officer

Our Path Forward: Focused Value Creation

Prioritize Lonigutamab

Prioritizing development of lonigutamab, which has best-in-class potential for thyroid eye disease and a clinical development program right-sized for ACELYRIN.

Disciplined Capital Allocation

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Accelerating Medicines to Transform Patients' Lives

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