Cowen 41st Annual Healthcare Conference

March 4, 2021

BioCryst Pharmaceuticals

Jon Stonehouse, **CEO**

Dr. Bill Sheridan**, CMO**

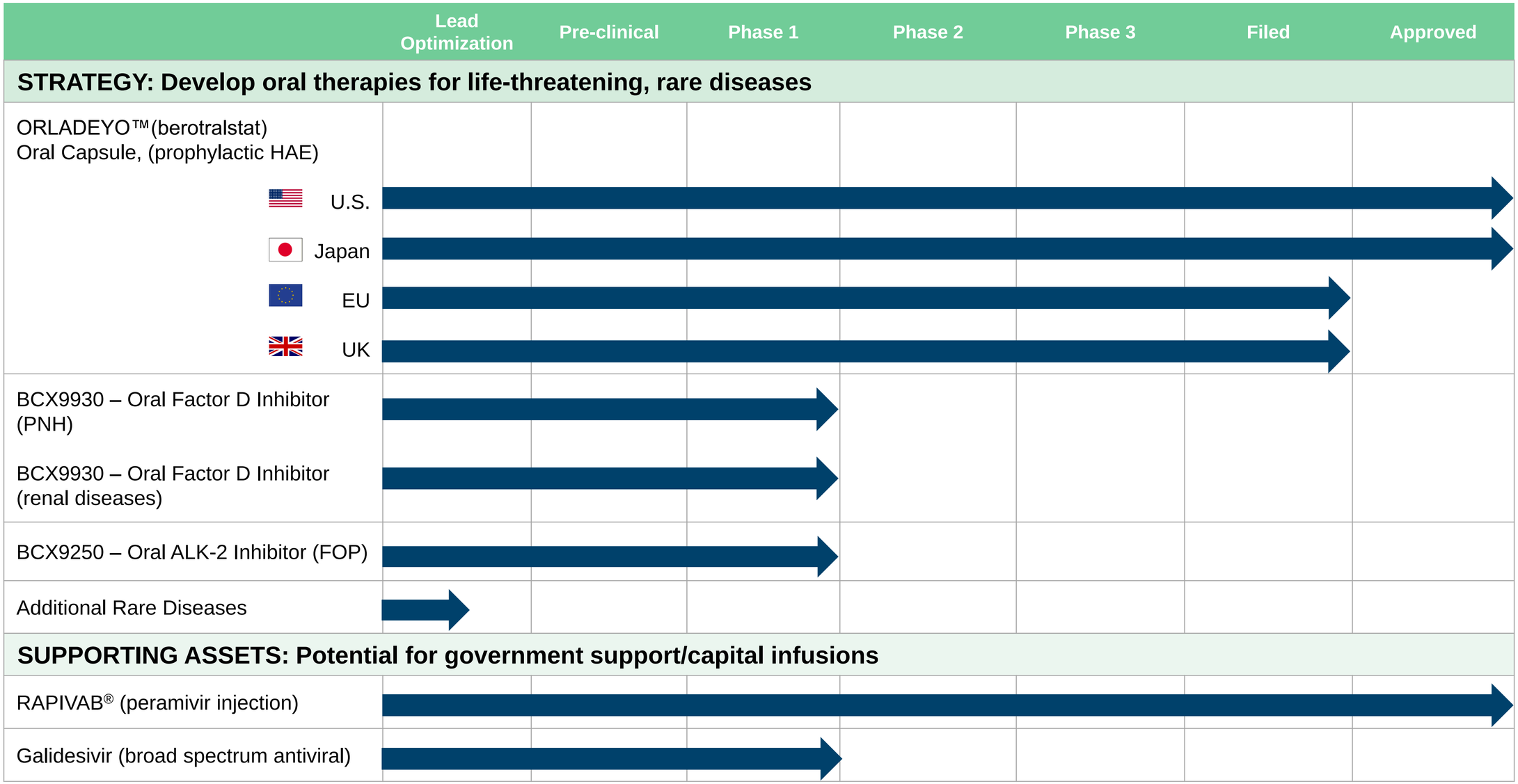
Forward-Looking Statements

BioCryst's presentation may contain forward-looking statements, including statements regarding future results, unaudited and forward-looking financial information and company performance or achievements. These statements are subject to known and unknown risks and uncertainties which may cause our actual results, performance or achievements to be materially different from any future results or performances expressed or implied in this presentation. You should not place undue reliance on the forward-looking statements. For additional information, including important risk factors, please refer to BioCryst's documents filed with the SEC and located at ir.biocryst.com/financial-information/sec-filings

Delivering extraordinary
Empowering ordinary

BioCryst develops novel oral medicines designed to treat rare disease to help patients experience a normal quality of life.

BioCryst's Robust Pipeline



Significant Upcoming Milestones in 2021

Q12021

- **Approval** decision on ORLADEYO in Japan (January 2021)
- **Data** from completed BCX9930 dose ranging study in PNH (R&D Day: March 22)

Q22021

- **Approval** decision on ORLADEYO in EU
- **Revenues** reported from Q1/first full quarter of ORLADEYO sales in US
- **Launch** of ORLADEYO in Japan
- **Launch** of ORLADEYO in Germany

Q32021

BCX9930 Advanced Development Trials

BCX9250 Next Steps

Q42021

ORLADEYO REVENUES

Orladeyo™ Launched

orladeyo™
(berotralstat) capsules 150 mg

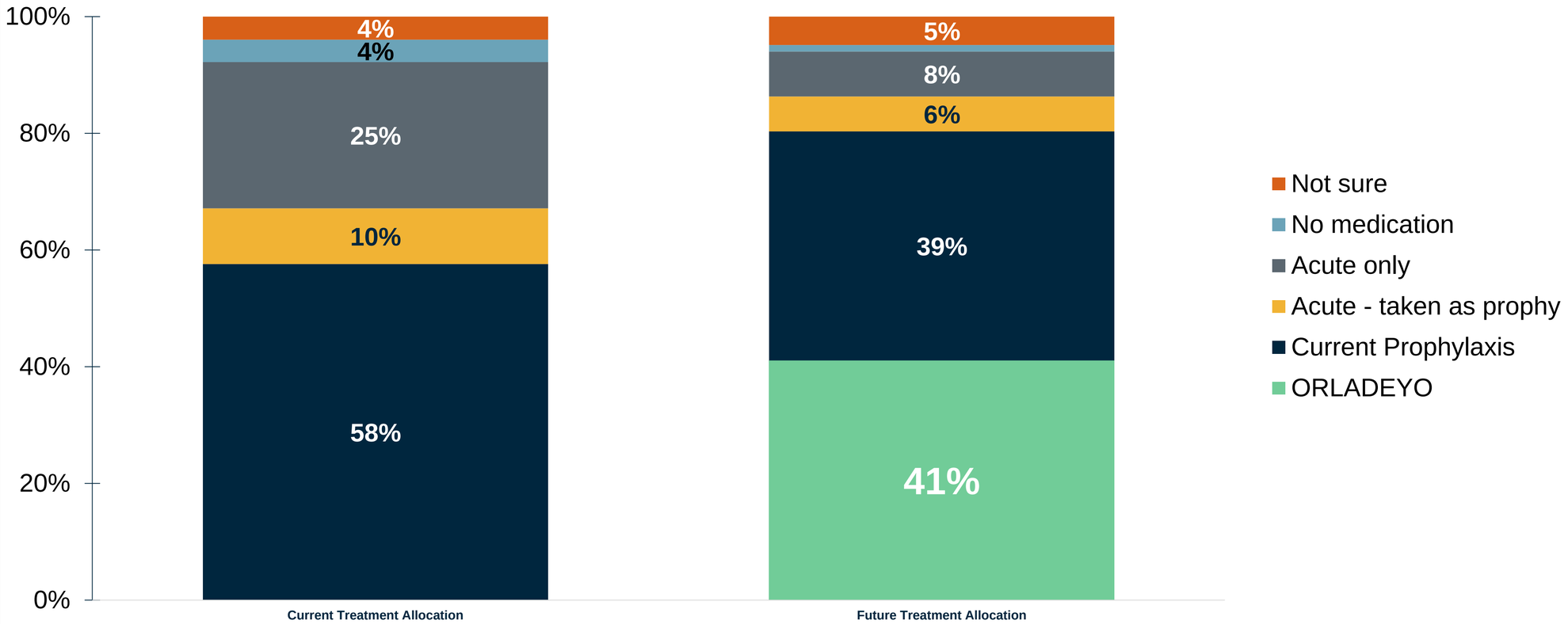
- **Strong early demand from patients for ORLADEYO**
  - Clinical trial conversions and patients new to ORLADEYO
  - New patients switching from all injectable prophylactics and acute therapy
  - Expanding prescriber base beyond investigators

- **Getting patients on therapy quickly while we secure reimbursement over time**

Physicians Expect to Prescribe ORLADEYO for Over 40% of HAE Patients

80% of HAE Patients Expected to be on Some Form of Prophylaxis

Patient Allocation by Medication Today and in Future with ORLADEYO Available – Mean % of Patients

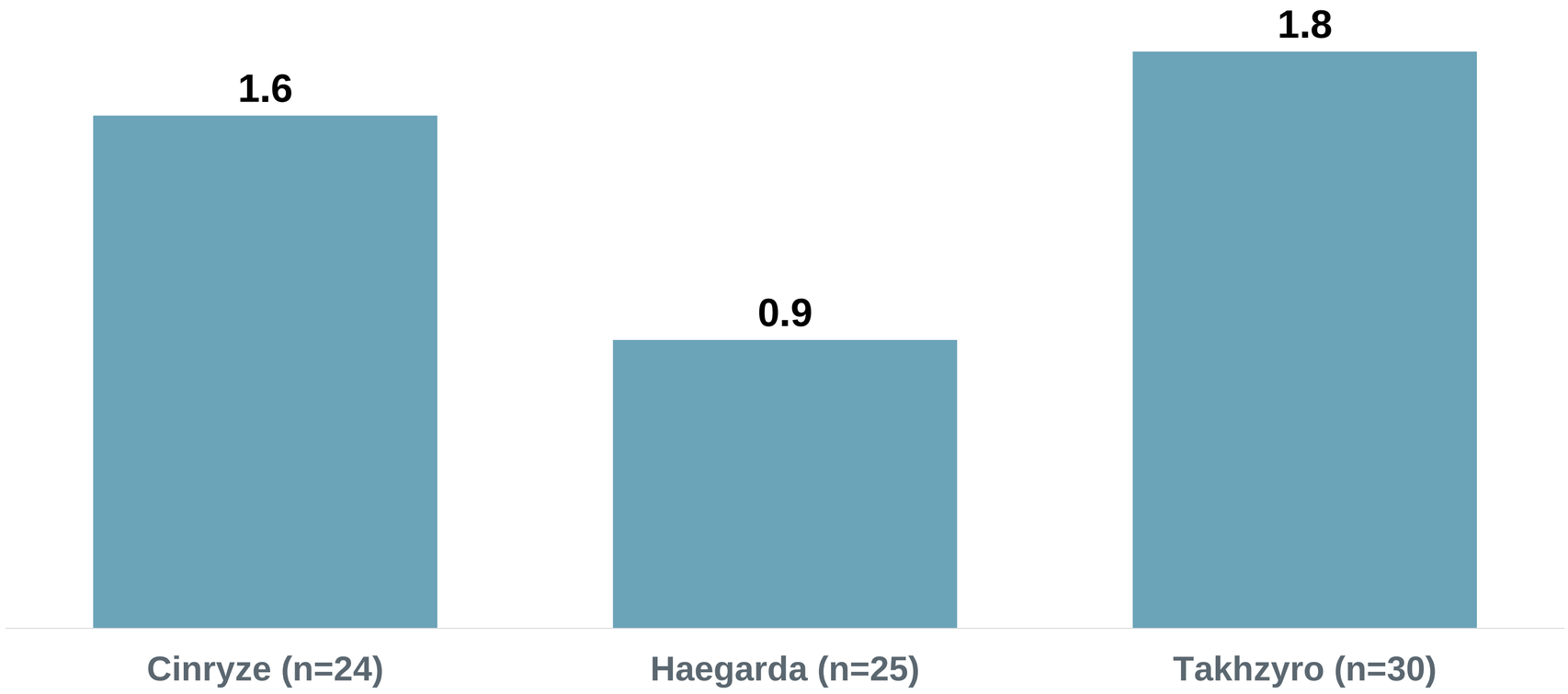


All Qualified Respondents (n=175)

Source: BioCryst Proprietary Market Research Study, 2019. Respondents were shown a blinded profile (Treatment X) of ORLADEYO, 24-week results of APeX-2, Physicians were asked to perform a patient allocation.

Patients Report Breakthrough Attacks with Injectable/Infused Treatments

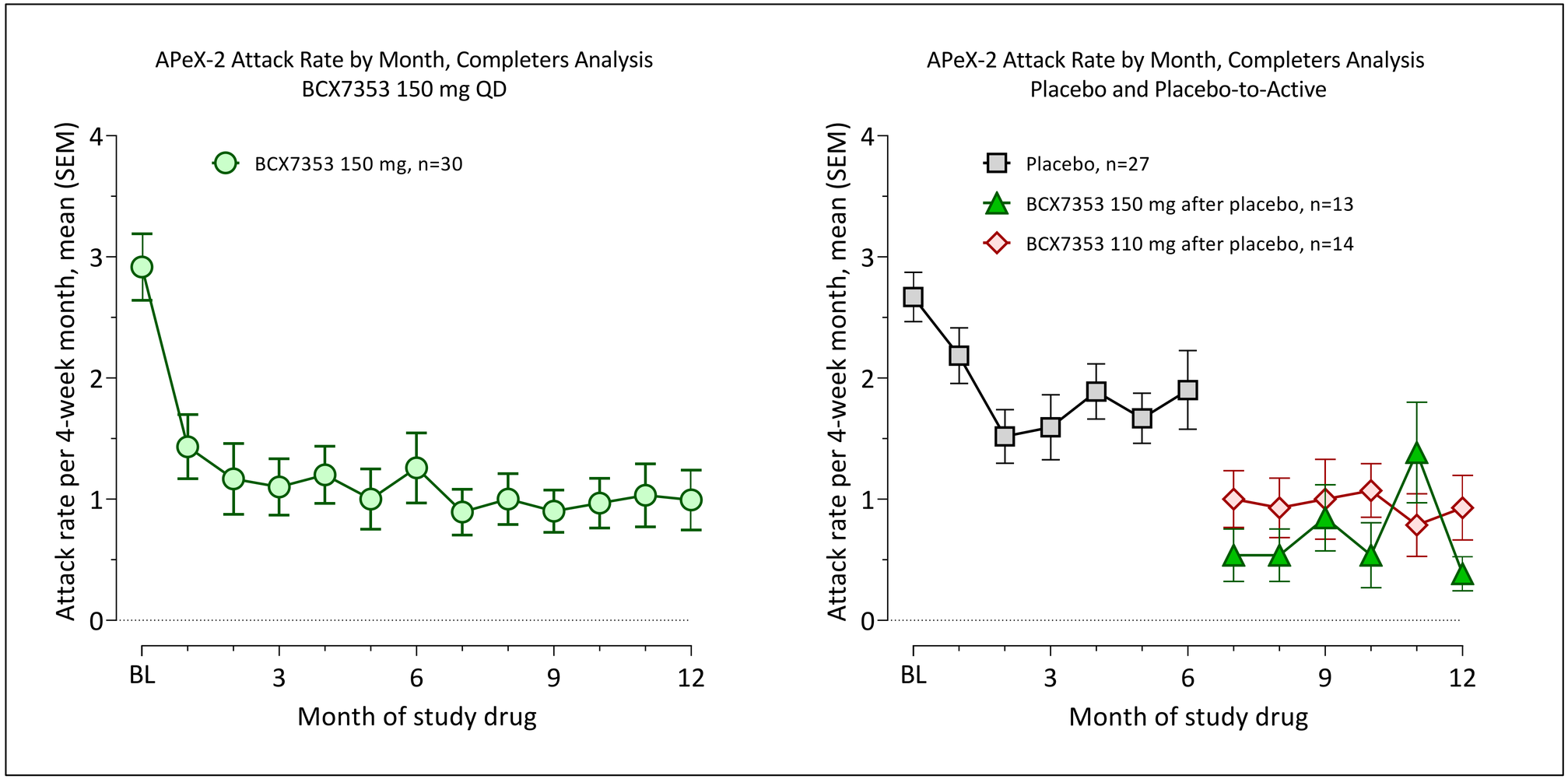
Mean Patient-Reported Attacks in Past 3 Months by Prophylaxis Medication



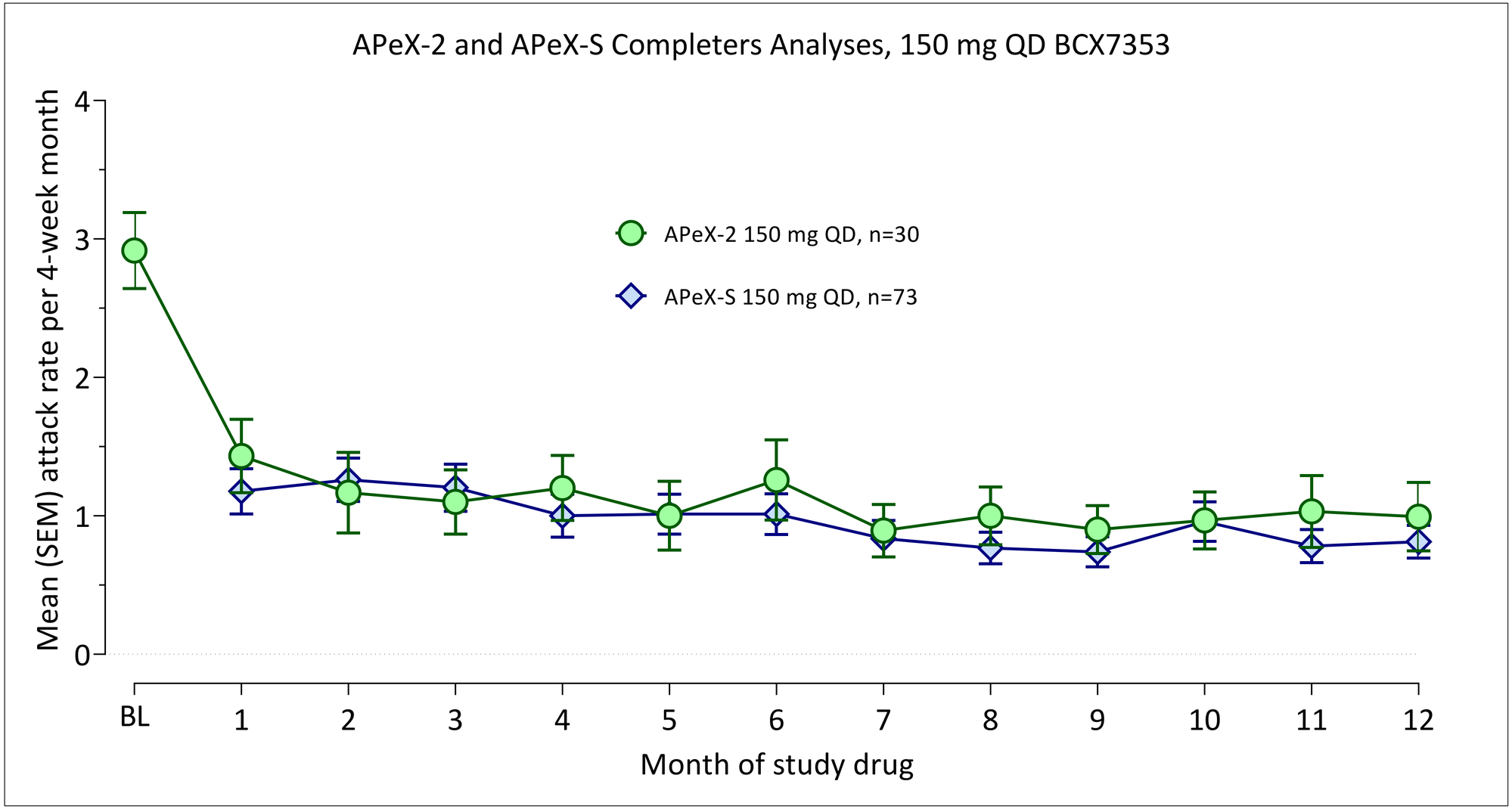
Currently Taking Medication Prophylactically

Source: BioCryst Proprietary Market Research Study, 2019.

Rapid and Sustained HAE Attack Rate Reduction: Analyses for APeX-2: 150 mg and Placebo 48-week Completers

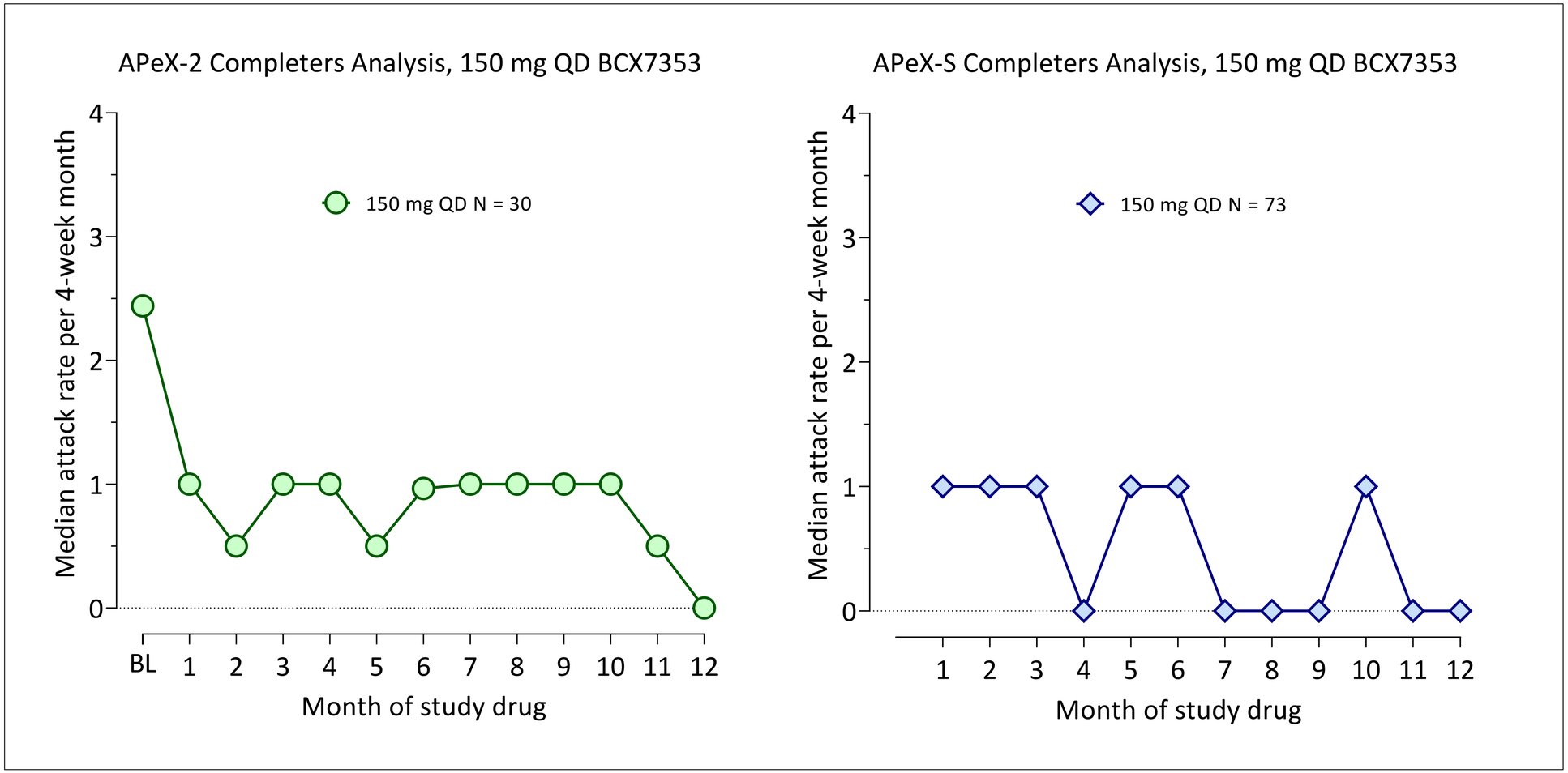


Consistent Mean Attack Rates in APeX-2 and APeX-S



Median Attack Rates in 48-week Completers:

Zero Attacks per Month in 6 of 12 Months in APeX-S



Approved Label: ORLADEYO™ (berotralstat) Safety

In APeX-2 (part 1), the most common[a] treatment-emergent adverse reactions were abdominal pain, vomiting, diarrhea, back pain, and gastroesophageal reflux disease (GERD)

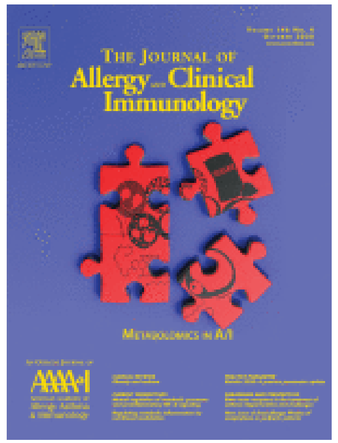
Adverse reactions	Placebo (n=39)	ORLADEYO 110 mg (n=41)	ORLADEYO 150 mg (n=40)
	n (%)	n (%)	n (%)
Abdominal pain[b]	4 (10)	4 (10)	9 (23)
Vomiting	1 (3)	4 (10)	6 (15)
Diarrhea[c]	0	4 (10)	6 (15)
Back pain	1 (3)	1 (2)	4 (10)
GERD	0	4 (10)	2 (5)

[a]≥10% and higher than placebo. [b]Includes abdominal pain, abdominal discomfort, abdominal tenderness, and upper abdominal pain. [c]Includes diarrhea and frequent bowel movements.

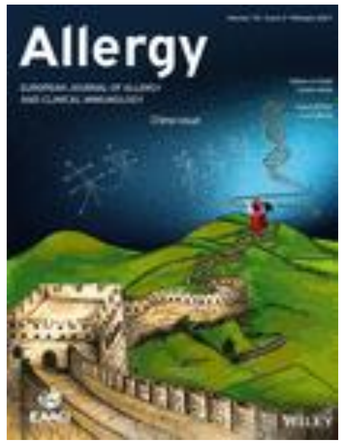
Findings from the open-label, long-term safety study, APeX-S (interim safety population, n=227), support the data observed in APeX-2 (part 1)

Recent Publications Support Launch

APeX-2 Trial



APeX-J Trial



2021 American Academy of Allergy, Asthma & Immunology (AAAAI) Annual Meeting

February 26-March 1, 2021.

Oral Abstract Presentation:

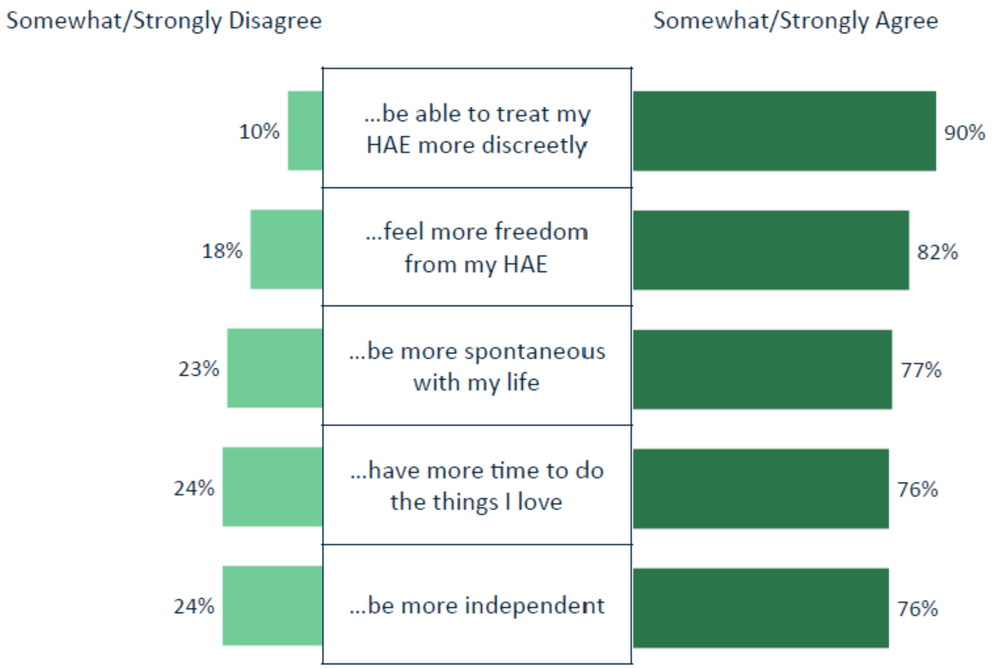
- *Berotralstat Reduces Use of On-demand Medication in Hereditary Angioedema (HAE) Patients Previously Treated with Prophylactic Therapies*

Posters:

- *Chart Audit Study: Physician-Reported Hereditary Angioedema Attacks for Patients on Prophylactic Treatments*
- *Berotralstat Consistently Demonstrates Reductions in Attack Frequency in Hereditary Angioedema (HAE) Irrespective of Baseline Attack Rate: Subgroup Analysis from the APeX-2 Trial*
- *Reduction in Attacks in Hereditary Angioedema (HAE) with Berotralstat is Consistent Regardless of Prior Prophylactic Treatment: A Subgroup Analysis of the Phase 3 APeX-2 Trial*

Significant Burden of Treatment Reported by Patients, Caregivers, and Treating Physicians

Patient perspective:
If I were prescribed a once daily pill to prevent (prophylaxis) HAE attacks, I would…*

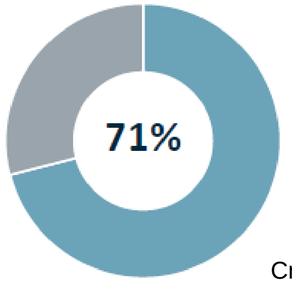


Agreement with statements regarding a once-daily oral HAE medication (n = 75)

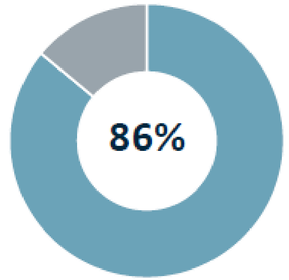
Radojicic et al., ACAAI 2020, Poster #160

Caregivers perspective: How patients perceive their prophylactic treatment

[Patient] is tired of his/her infusions/injections
*% of caregivers who somewhat/strongly agree**

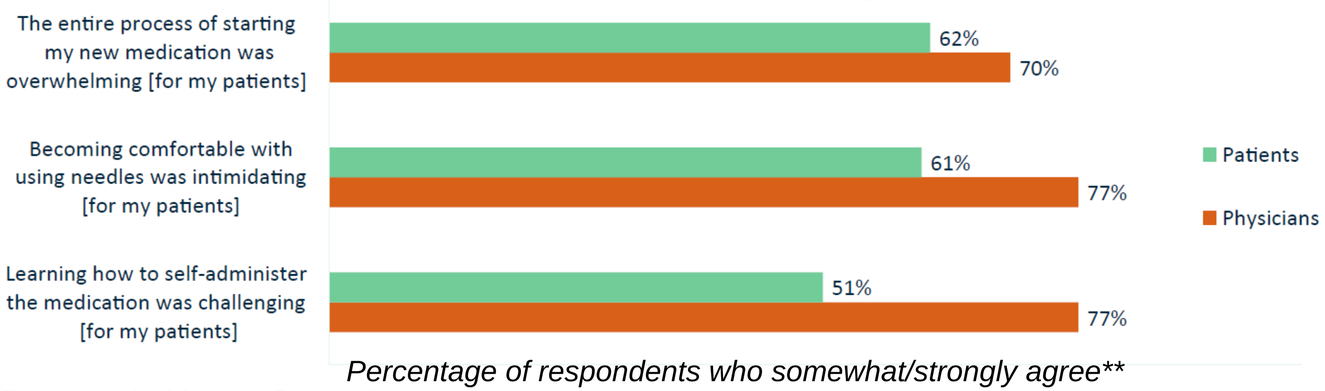


[Patient] is satisfied with his/her current HAE treatment, but would still be interested in one that is easier to administer
*% of caregivers who somewhat/strongly agree**



Craig et al., ACAAI 2020, Poster #161

Physician and patient perceptions about starting HAE prophylaxis:



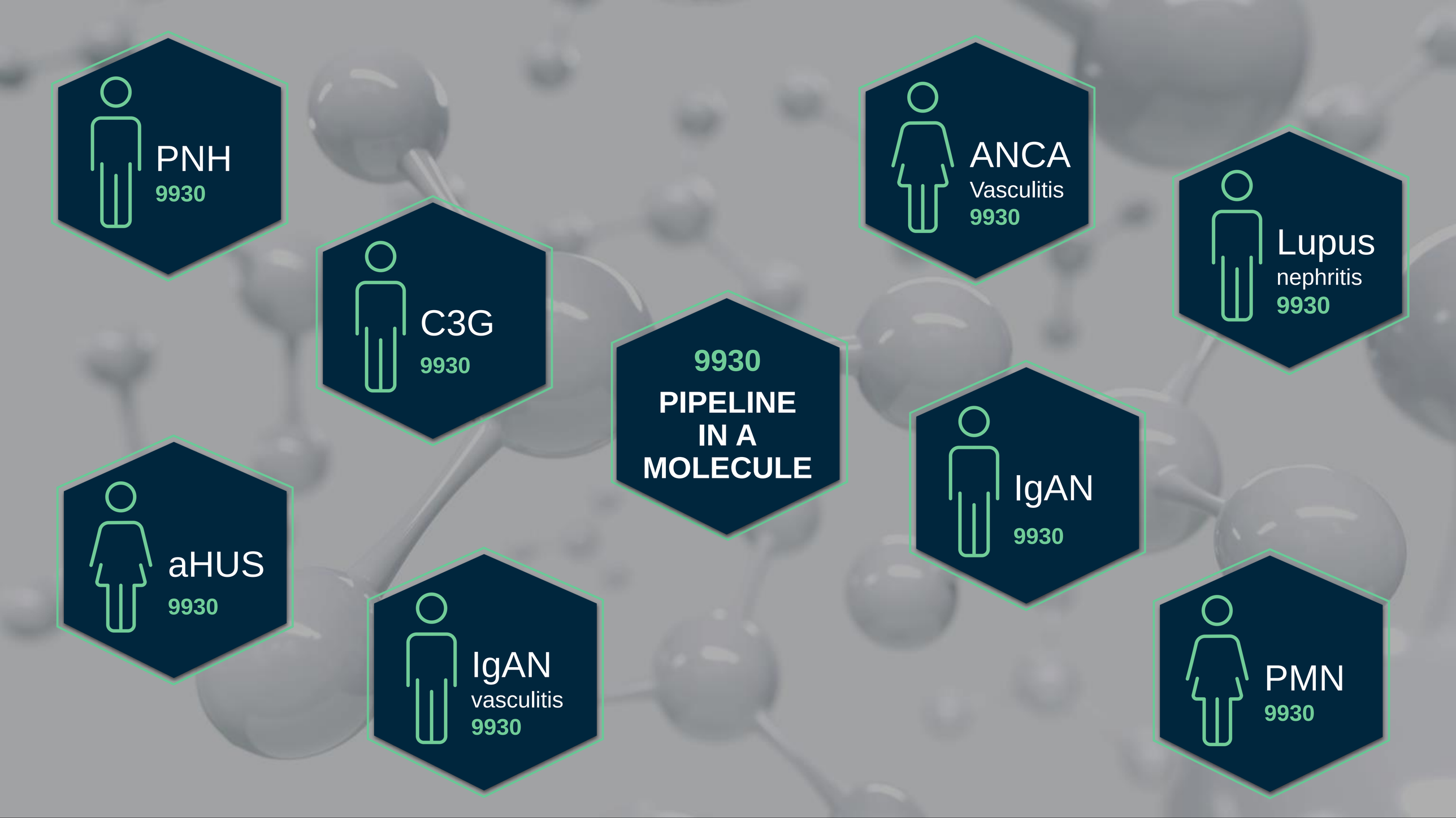
*Percentage of respondents who somewhat/strongly agree***

Riedl et al., ACAAI 2020, Poster #162

Cross-sectional study conducted via three double-blinded surveys with HAE patients (n=75), caregivers (n=30) and physicians (n=109)

**Bases vary; not applicable/not sure excluded;*

***Bases vary; not applicable/not sure excluded; text in brackets was included in the response options for physicians*


PNH
9930
C3G
9930
9930
PIPELINE
IN A
MOLECULE
aHUS
9930
IgAN
vasculitis
9930
ANCA
Vasculitis
9930
IgAN
9930
Lupus
nephritis
9930
PMN
9930

Alternative Complement Pathway Activation Products in Urine and Kidneys of Patients with ANCA-Associated GN

Shen-Ju Gou, Jun Yuan, Chen Wang, Ming-Hui Zhao, and Min Chen

Clin J Am Soc Nephrol 8: 1884–1891, 2013. doi: 10.2215/CJN.02790313

Complement activation products in the circulation and urine of primary membranous nephropathy

Mu-fan Zhang[1,2,3,4], Jing Huang[1,2,3,4], Yi-miao Zhang[1,2,3,4], Zhen Qu[1,2,3,4], Xin Wang[1,2,3,4], Fang Wang[1,2,3,4], Li-qiang Meng[1,2,3,4], Xu-yang Cheng[1,2,3,4], Zhao Cui[1,2,3,4*], Gang Liu[1,2,3,4] and Ming-hui Zhao[1,2,3,4,5]

BMC Nephrology (2019) 20:313

The Emerging Role of Complement Proteins as a Target for Therapy of IgA Nephropathy

Dana V. Rizk[1], Nicolas Maillard[2], Bruce A. Julian[1], Barbora Knoppova[3,4], Todd J. Green[3], Jan Novak[3] and Robert J. Wyatt[5]**

CJASN Clinical Journal of American Society of Nephrology

Causes of Alternative Pathway Dysregulation in Dense Deposit Disease

Yuzhou Zhang, Nicole C. Meyer,* Kai Wang,† Carla Nishimura,* Kathy Frees,* Michael Jones,* Louis M. Katz,‡ Sanjeev Sethi,§ and Richard J.H. Smith*‖*

frontiers in Immunology
REVIEW
published: 14 June 2019
doi: 10.3389/fimmu.2019.01157

Anti-complement Treatment for Paroxysmal Nocturnal Hemoglobinuria: Time for Proximal Complement Inhibition? A Position Paper From the SAAWP of the EBMT

Antonio M. Risitano[1,2], Serena Marotta[1,2], Patrizia Ricci[1], Luana Marano[1], Camilla Frieri[1], Fabiana Cacace[1], Michela Sica[3], Austin Kulasekararaj[3,4], Rodrigo T. Calado[5], Phillip Scheinberg[6], Rosario Notaro[3†] and Regis Peffault de Latour[2,7†] on behalf of the Severe Aplastic Anemia Working Party of the European group for Bone Marrow Transplantation*

Complement Alternative Pathway's Activation in Patients With Lupus Nephritis

Di Song, PhD, Wei-yi Guo, PhD, Feng-mei Wang, PhD, Yong-zhe Li, PhD, Yan Song, MD, Feng Yu, MD and Ming-hui Zhao, MD, PhD

Am JMedSci 2017;353(3):247–257

Seminars in Thrombosis and Hemostasis

Pathology of Renal Diseases Associated with Dysfunction of the Alternative Pathway of Complement: C3 Glomerulopathy and Atypical Hemolytic Uremic Syndrome (aHUS)

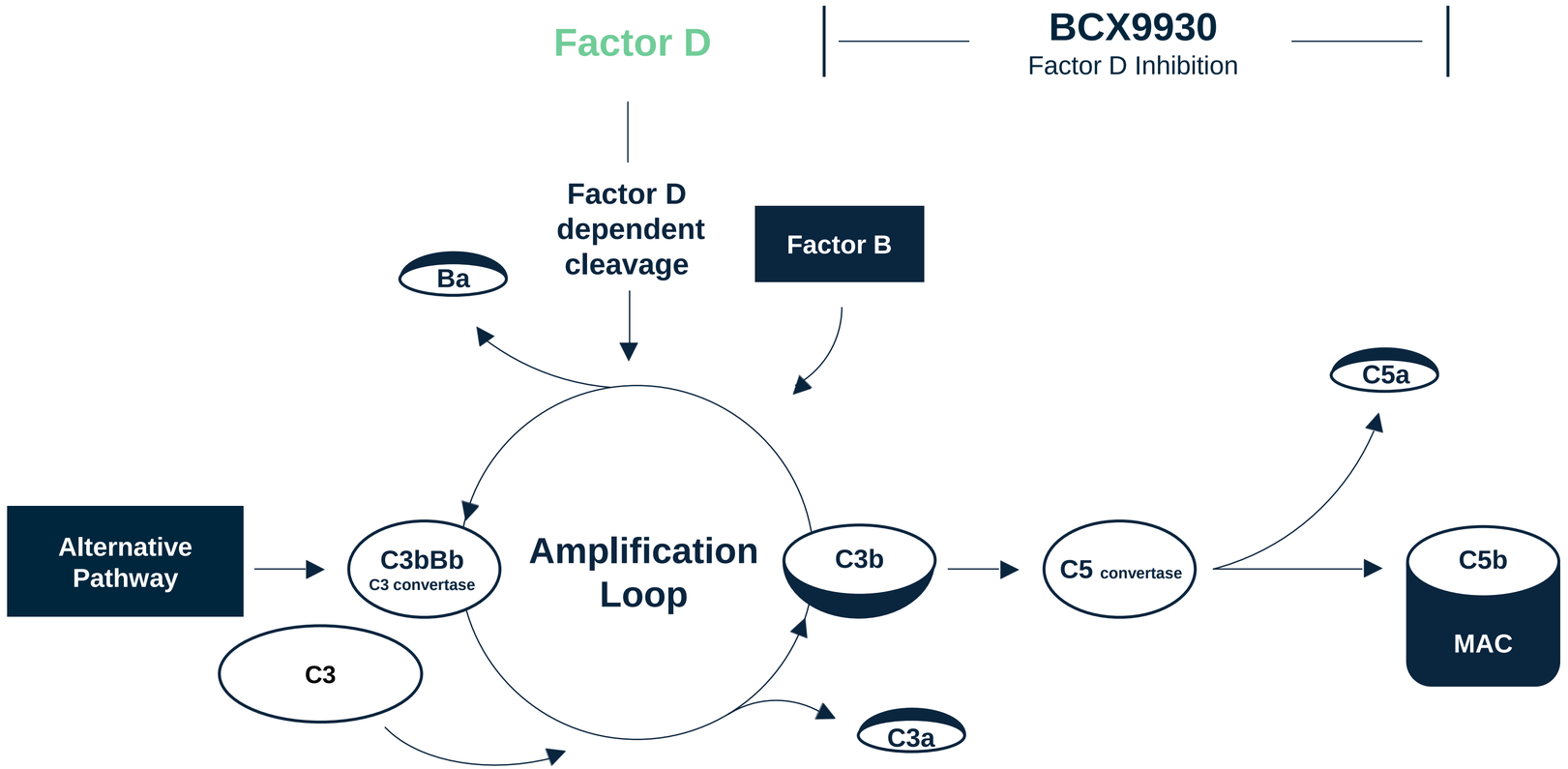
Sanjeev Sethi, MD, PhD[1] Fernando C. Fervenza, MD, PhD[2]

C3 glomerulopathy — understanding a rare complement-driven renal disease

Richard J. H. Smith[1], Gerald B. Appel[2], Anna M. Blom[3], H. Terence Cook[4], Vivette D D'Agati[5], Fadi Fakhouri[6], Véronique Fremeaux-Bacchi[7], Mihály Józsi[8], David Kavanagh[9], John D. Lambris[10], Marina Noris[11], Matthew C. Pickering[12], Giuseppe Remuzzi[11,13,14], Santiago Rodriguez de Córdoba[15], Sanjeev Sethi[16], Johan Van der Vlag[17], Peter F. Zipfel[18,19] and Carla M. Nester[1]*

Factor D:
An Outstanding Drug Target for Complement-mediated Diseases

- Factor D is essential to initiate the Alternative Pathway
- Blocking Factor D blocks the Alternative Pathway and all downstream products



Spectrum of Alternative Pathway Dysregulation Diseases

HEMATOLOGY

PNH
paroxysmal nocturnal hemoglobinuria

aHUS
atypical hemolytic uremic syndrome

RHEUMATOLOGY

ANCA vasculitis
antineutrophil cytoplasmic antibody-associated vasculitis

Lupus nephritis

IgAN vasculitis

NEPHROLOGY

C3G
glomerulonephritis

PMN
primary membranous nephropathy

IgAN
IgA nephropathy

Oral Monotherapy with BCX9930 Offers Advantage of Controlling Both Intravascular (IVH) and Extravascular (EVH) Hemolysis

Goal of Total Hemolytic Control

IVH Control

↓ LDH

+

EVH Control

↓ Opsonized RBCs

Hemolytic Control

↑ RBC/Granulocyte Clone Size

Patient Outcomes from Controlled Hemolysis over Time

Relieve Anemia

↑ Hemoglobin

Reduce PNH Clinical Symptoms

↓ Appearance of Symptoms

Avoid Transfusions

↓ Transfusions

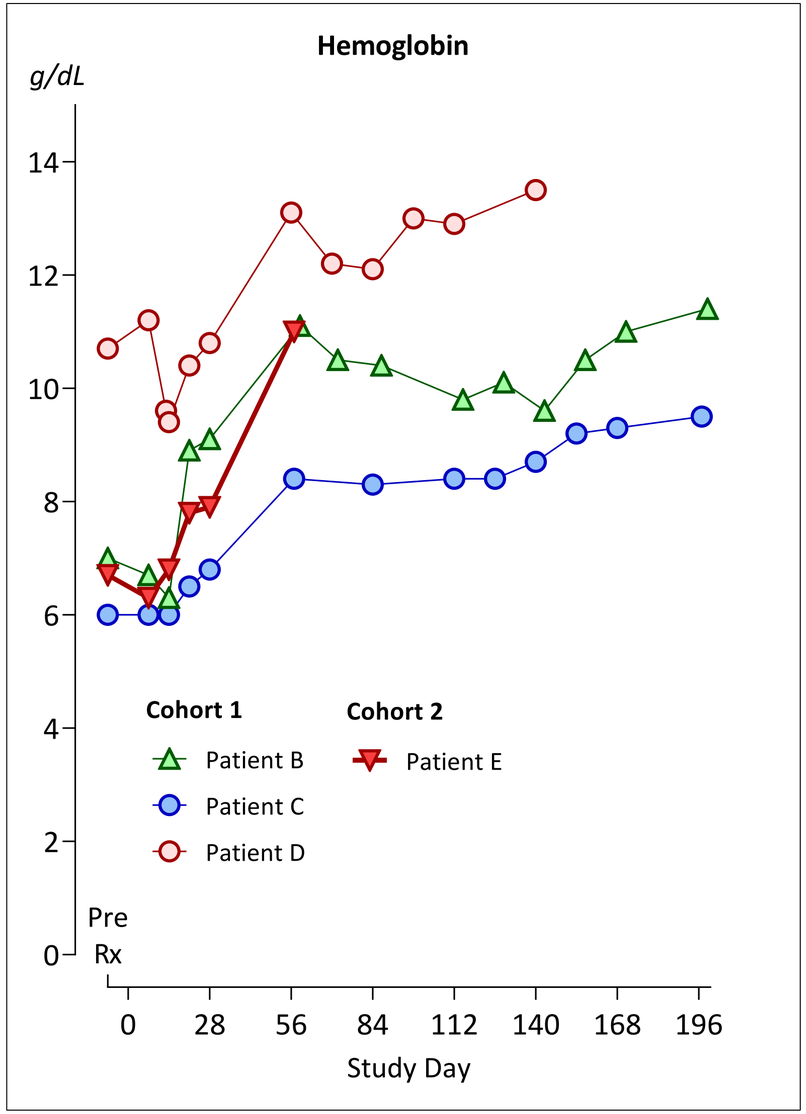
A. M. Risitano *et al.*, *Front Immunol* **10**, 1157 (2019)

Treatment-naïve PNH Patients Had Severe Disease Prior to Treatment

Pre-treatment Characteristics	Cohort 1				Cohort 2		
Sequential Patient # in Cohort	*1*	*2*	*3*	*4*	*1*	*2*	*3*
Patient Code	*A*	*B*	*C*	*D*	*E*	*F*	*G*
PNH duration, years	8	4	4	5	2	5	1
Compromised bone marrow function	no	no	yes	no	yes	yes	yes
History of thrombosis, pulmonary HT or PNH renal injury	yes	yes	no	no	no	no	no
Lactate dehydrogenase (LDH), × ULN	9.8	11.0	3.7	6.9	4.2	4.6	3.8
Hemoglobin, g/dL	8.2	7.0	6.0	10.7	6.7	7.6	11.0
Units of RBC transfused in 52 weeks prior to screening	0	13	0	2	12	1	2
Reticulocytes, 10^3cells/µL	220	285	130	203	128	115	181
PNH erythrocyte (RBC) clone size, %	89	41	49	49	33	76	48
PNH RBC relative to PNH WBC, %	89	42	53	60	36	78	61

Laboratory values for LDH, reticulocyte count, total bilirubin and PNH erythrocyte clone size are average of available screening and baseline results. HT: hypertension.
Hemoglobin is last available value prior to Day 1 of BCX9930 administration. Study is ongoing – preliminary data.
Patients highlighted in green shading have progressed through at least 6 weeks of treatment on study at 400 mg BID
Patients with compromised bone marrow function have history of aplastic anemia or intermediate PNH

Meaningful Changes in Key Biomarkers Indicating Control of Hemolysis

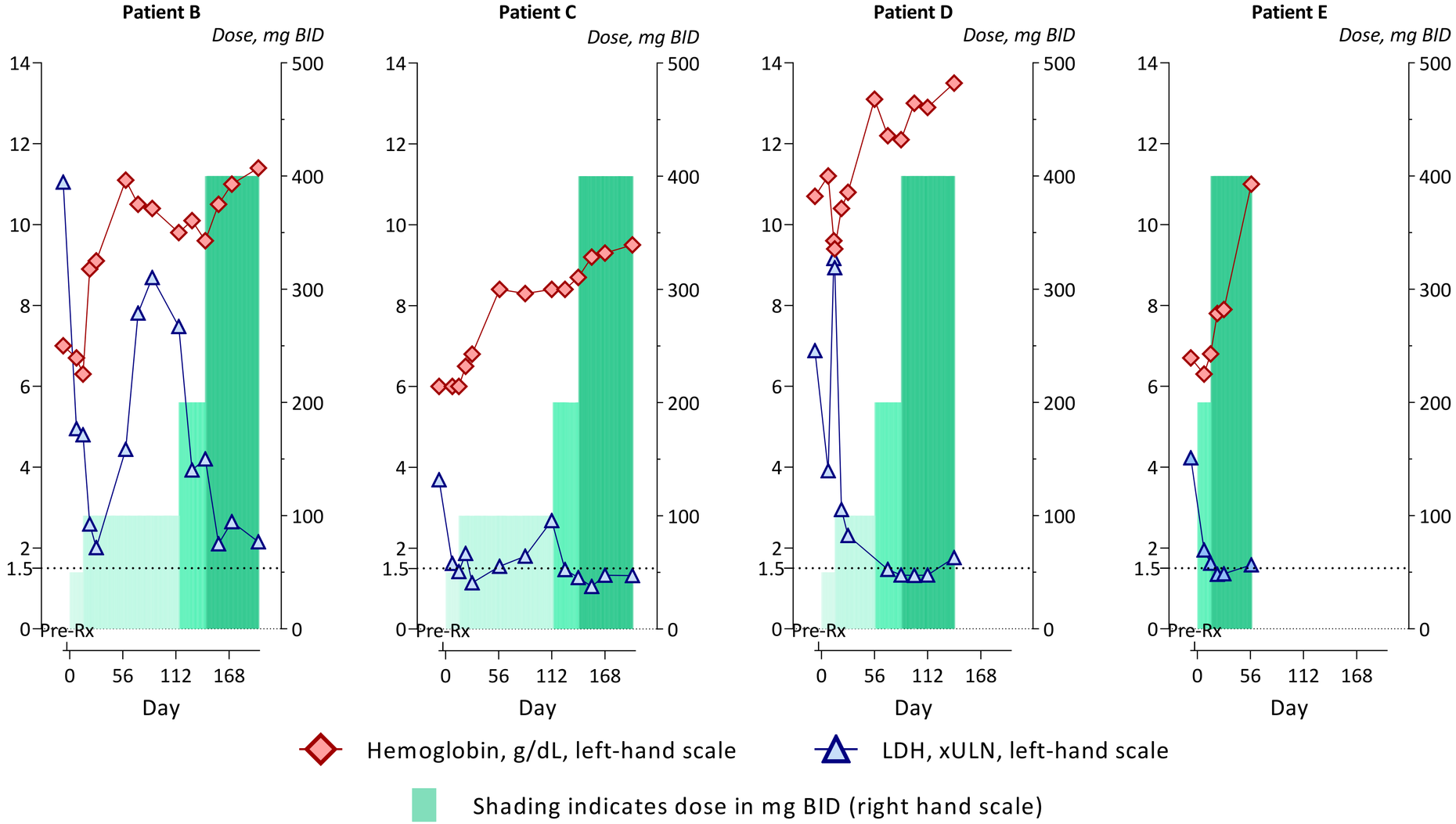


Patient	Duration at 400 mg BID	Hemoglobin g/dL		RBC Clone Size % of Granulocyte Clone Size		# of Transfusions @ 200/400 mg
		Pre-Rx	Most Recent	Pre-Rx	Most Recent	
B	56 days	7.0	11.4	42%	100%	0
C	57 days	6.0	9.5	53%	97%	0
D	56 days	10.7	13.5	60%	87%	0
E	43 days	6.7	11.0	36%	92%	0
Mean	***53 days***	***7.6***	***11.4***	***48%***	***94%***	***0***

- Mean increase in Hb from baseline of 3.8 g/dL
- Hb maintained at 400 mg BID without RBC transfusions
- Mean RBC PNH clone size relative to granulocyte clone size increased to 94% from 48% pre-Rx

Study is ongoing – preliminary data as reported 9/30/20. One 2-unit RBC transfusion in Patient B on study day 15 after 50 mg BID x 14 d (previously reported).

BCX9930 Dose-response in Hemoglobin and LDH in PNH Patients



Study is ongoing – preliminary data as reported 9/30/20

BCX9930 has been Safe and Well Tolerated in PNH Patients

Overall Safety

- No discontinuations due to related AEs
- No BCX9930-related serious AEs or safety signals
- No safety signals in routine monitoring of vital signs, ECGs, or laboratory evaluations of hematology, coagulation, urinalysis, or clinical chemistry

Adverse Events

- The most common drug-related TEAE was mild-moderate headache lasting 1-3 days
- Two patients had mild rash that resolved during continued uninterrupted BCX9930 dosing
- One unrelated serious AE*

Study is ongoing – preliminary data as reported 9/30/20.

**Unrelated SAE previously reported, primary disseminated VZV infection in a non-immune subject taking corticosteroids, fatal.*

Q1 Data Readout and Next Steps for BCX9930

Phase 1 dose-ranging trial in PNH has fully enrolled

- Data from total of 16 patients
- Duration of treatment up to >48 weeks
- Both treatment-naïve patients (n=10) and C5 inadequate responders (n=6)
- Data from 15 patients treated at doses of 400 mg bid or 500 mg bid for at least six weeks
- Data to be announced at R&D Day on March 22nd
    - Plan to report range of clinical and laboratory outcomes, biomarkers and safety data

Next Steps

- Begin (2H 2021) pivotal trials in PNH patients at selected dose level
- Begin (2H 2021) PoC trial(s) in patients with renal complement-mediated diseases at same selected dose

Goal in PNH: BCX9930 as oral monotherapy for all PNH patients

Fibrodysplasia Ossificans Progressiva (FOP)

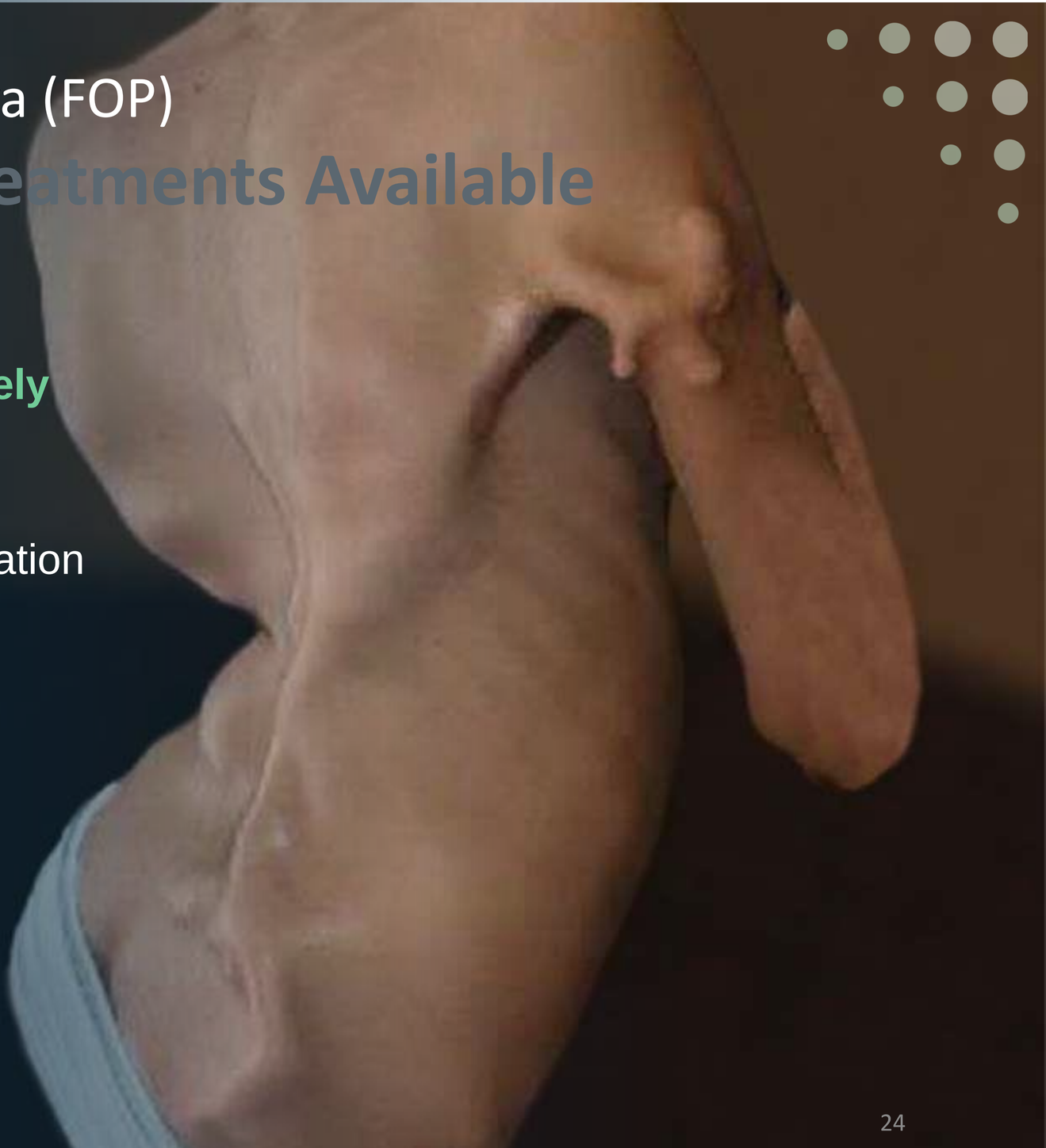
Devastating Disease; No Treatments Available

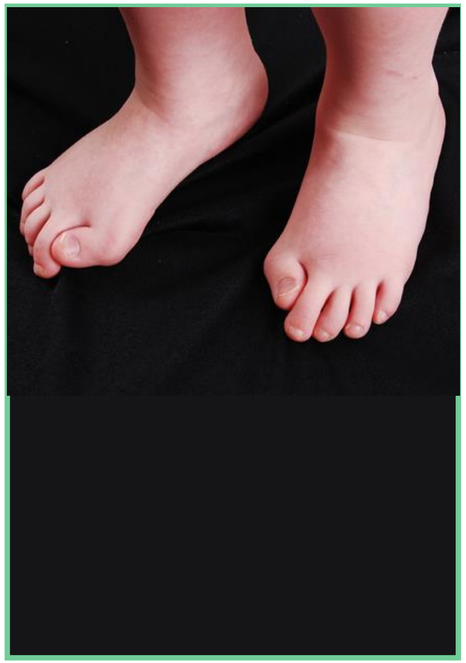
Rare disease that **affects approximately 1 in 2 million people** worldwide

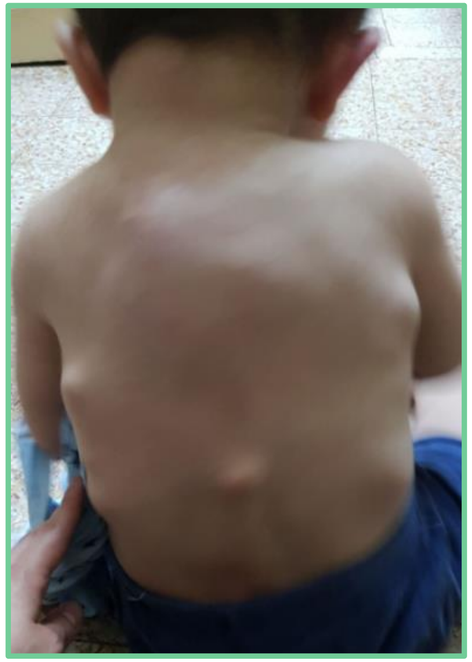
Irregular formation of bone or ossification in muscles, tendons or soft tissue

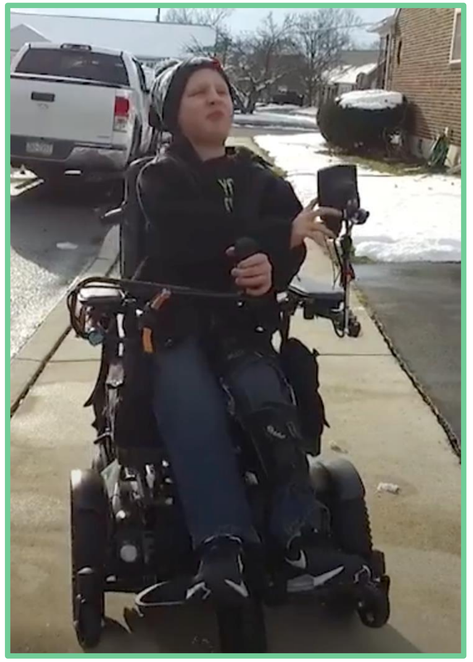
Currently no approved treatments for FOP

Results in loss of function, deformities and **a severely disabling condition**









ifopa.org

BCX9250 Phase 1 Healthy Subject Trial Design

Randomized, double-blind, placebo-controlled, dose-ranging trial in healthy volunteers

Objective: to evaluate safety, tolerability, and pharmacokinetics of single ascending doses (SAD) and multiple ascending doses (MAD) of orally administered BCX9250

Part 1

Single ascending dose

- 8 subjects per cohort
  - 6 active, 2 placebo

Dose levels evaluated:

- 5mg
- 10mg
- 15mg (fed and fasted)
- 25mg

Part 2

Multiple ascending dose, once daily (QD) for 7 days

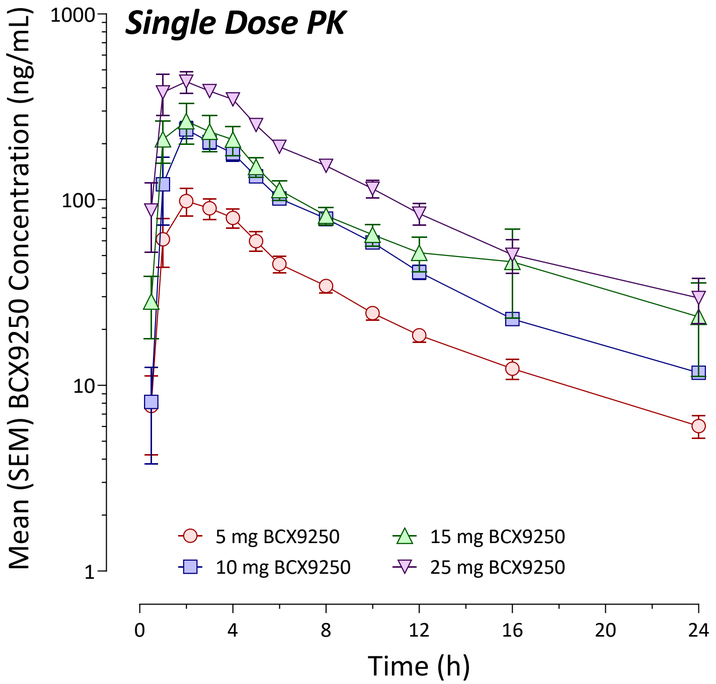
- 12 subjects per cohort
  - 10 active, 2 placebo

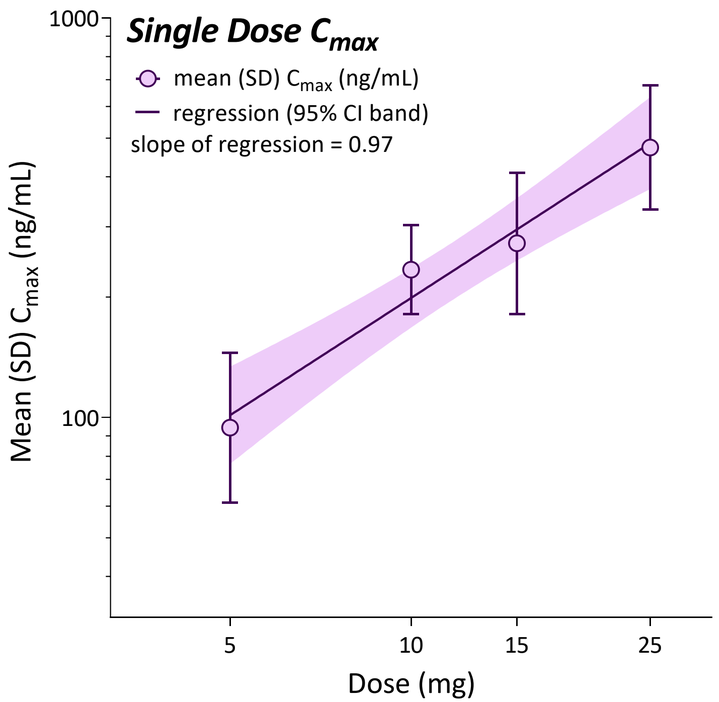
Dose levels evaluated:

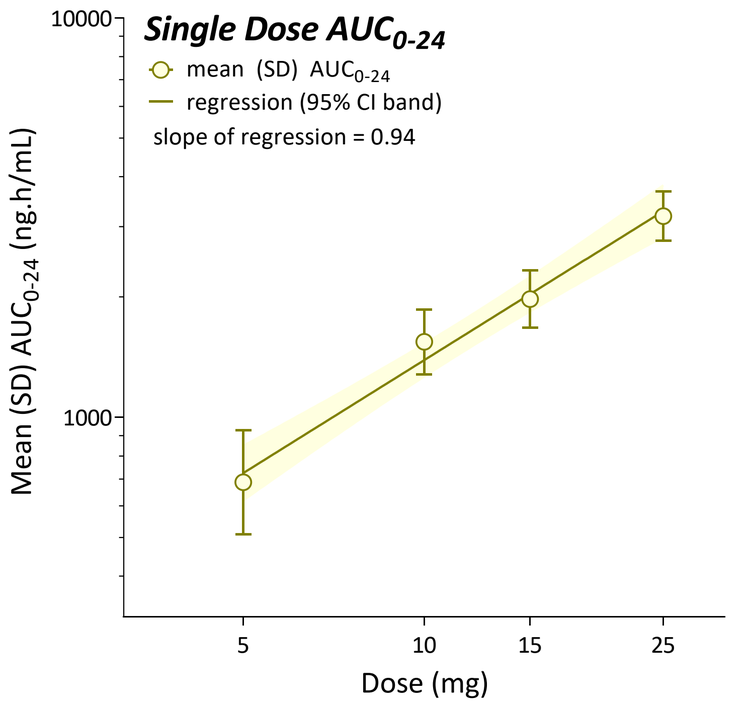
- 5mg
- 10mg
- 15mg
- 20mg

BCX9250 SAD PK Profile and Dose-exposure Analysis

BCX9250 exposure was approximately linear and dose proportional over the doses evaluated

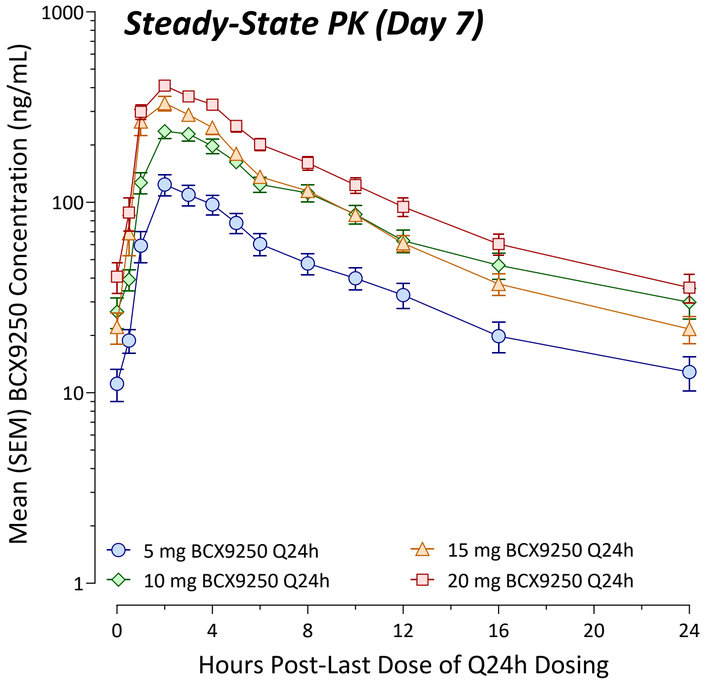


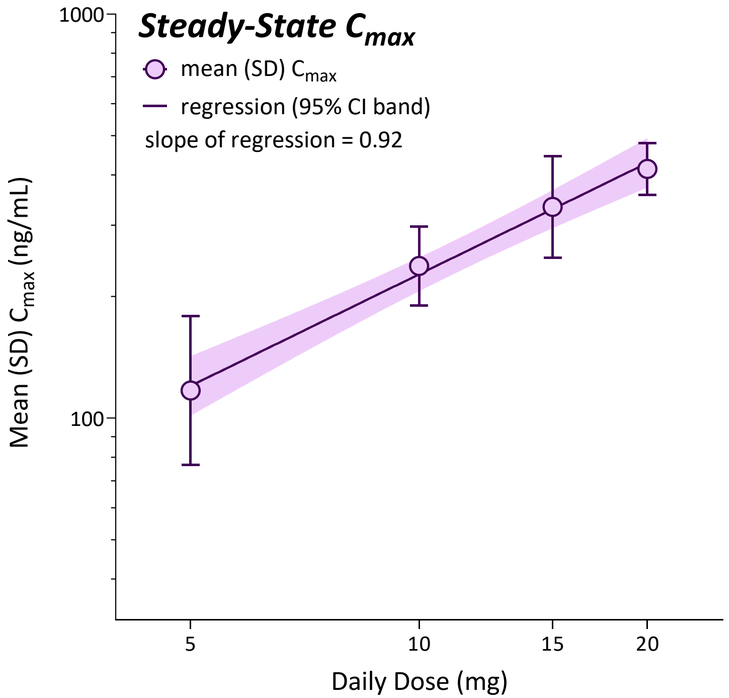


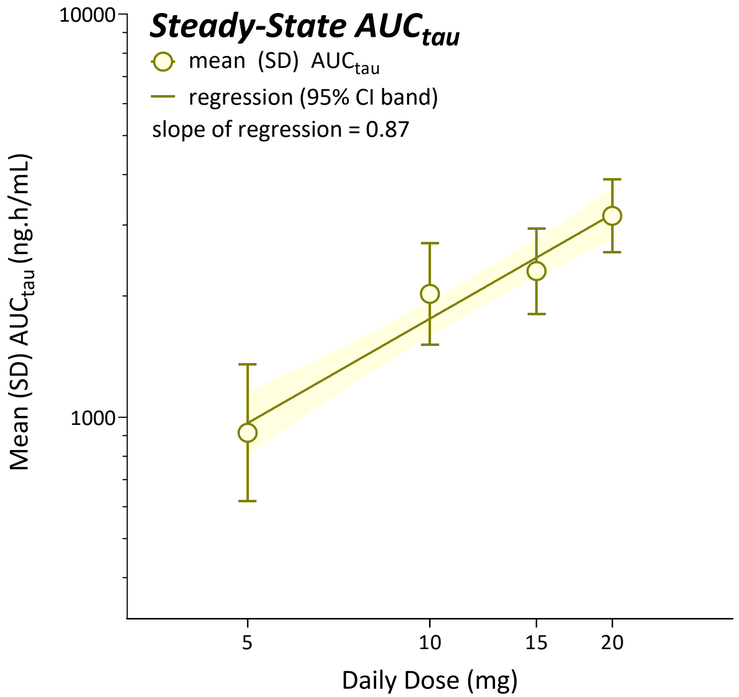


BCX9250 MAD PK Profile and Dose-exposure Analysis

BCX9250 steady-state exposure was approximately linear and dose proportional over the doses evaluated, with minimal accumulation relative to the first dose







BCX9250 Phase 1 Trial: Summary of Adverse Events

Category of Treatment-Emergent Adverse Event (TEAE)	Single Ascending Doses (SAD)						Multiple Ascending Doses (MAD)				
All data is reported as subject incidence, n (%)	**Placebo**	**BCX9250**					**Placebo**	**BCX9250**			
	(n=8)	**5 mg (n=6)**	**10 mg (n=6)**	**15 mg Fasted (n=6)[a]**	**15 mg Fed (n=6)**	**25 mg (n=6)**	**(n=7)[b]**	**5 mg (n=10)**	**10 mg (n=10)**	**15 mg (n=10)**	**20 mg (n=10)**
At least one TEAE	4 (50.0)	0	0	4 (66.7)	3 (50.0)	0	5 (71.4)	6 (60.0)	3 (30.0)	6 (60.0)	6 (60.0)
Drug-related TEAEs	3 (37.5)	0	0	2 (33.3)	0	0	4 (57.1)	0	3 (30.0)	1 (10.0)	0
Grade 3 or 4 TEAEs	0	0	0	0	0	0	0	0	0	0	0
Serious TEAE	0	0	0	0	0	0	0	0	0	0	0
Drug-related serious TEAE	0	0	0	0	0	0	0	0	0	0	0
TEAE leading to study discontinuation	0	0	0	0	0	0	0	0	0	0	0
Drug-related TEAE leading to study discontinuation	0	0	0	0	0	0	0	0	0	0	0
TEAEs reported by 2 or more subjects [c]											
Medical device site reaction [d]	0	0	0	2 (33.3)	1 (16.7)	0	0	2 (20.0)	0	1 (10.0)	3 (30.0)
Headache	2 (25.0)	0	0	1 (16.7)	0	0	1 (14.3)	0	2 (20.0)	2 (20.0)	0
Vessel puncture site pain	1 (12.5)	0	0	0	0	0	1 (14.3)	1 (10.0)	0	0	2 (20.0)
Abdominal discomfort	2 (25.0)	0	0	0	0	0	0	0	1 (10.0)	0	0
Abdominal pain	1 (12.5)	0	0	0	0	0	0	0	1 (10.0)	0	1 (10.0)
Diarrhea	1 (12.5)	0	0	0	0	0	0	0	2 (20.0)	0	0
Constipation	0	0	0	0	0	0	1 (14.3)	0	0	1 (10.0)	0
Flatulence	0	0	0	0	0	0	1 (14.3)	0	1 (10.0)	0	0
Nausea	1 (12.5)	0	0	1 (16.7)	0	0	0	0	0	0	0
Cough	1 (12.5)	0	0	0	0	0	0	0	1 (10.0)	0	0

[a] One subject discontinued from study after completing first dose (fasted) and was replaced for the second dose (fed).

[b] Only one placebo subject was enrolled in MAD 20 mg cohort. The last subject was not enrolled due to impact of COVID-19 on screening.

[c] All TEAEs were mild except for one event of moderate myalgia in the MAD 10 mg dose group, not related to study drug.

[d] Reported event: electrode site (skin) irritation due to ECG lead placement

Cash position (in millions) and 2021 Financial Outlook

Cash, cash equivalents, restricted cash & investments at December 31, 2019	$138
Cash, cash equivalents, restricted cash & investments at December 31, 2020 [A]	$303
Senior credit facility [B]	$125

A – Reflects net cash received in December 2020 from Royalty Pharma and Athyrium Capital Management following transaction-related fees and payoff of prior MidCap debt

B - From Athyrium Capital Management, $125M interest-only for 5-year term

In the launch period for ORLADEYO, the company is not providing specific revenue or operating expense guidance. Based on our expectations for revenue, operating expenses, and our option to access an additional $75 million from our existing credit facility, we believe our current cash runway takes us into 2023.

Significant Upcoming Milestones in 2021

Q12021

- **Approval** decision on ORLADEYO in Japan (January 2021)
- **Data** from completed BCX9930 dose ranging study in PNH (R&D Day: March 22)

Q22021

- **Approval** decision on ORLADEYO in EU
- **Revenues** reported from Q1/first full quarter of ORLADEYO sales in US
- **Launch** of ORLADEYO in Japan
- **Launch** of ORLADEYO in Germany

Q32021

BCX9930 Advanced Development Trials

BCX9250 Next Steps

Q42021

ORLADEYO REVENUES

Cowen 41st Annual Healthcare Conference

March 4, 2021

BioCryst Pharmaceuticals

Jon Stonehouse, **CEO**

Dr. Bill Sheridan**, CMO**