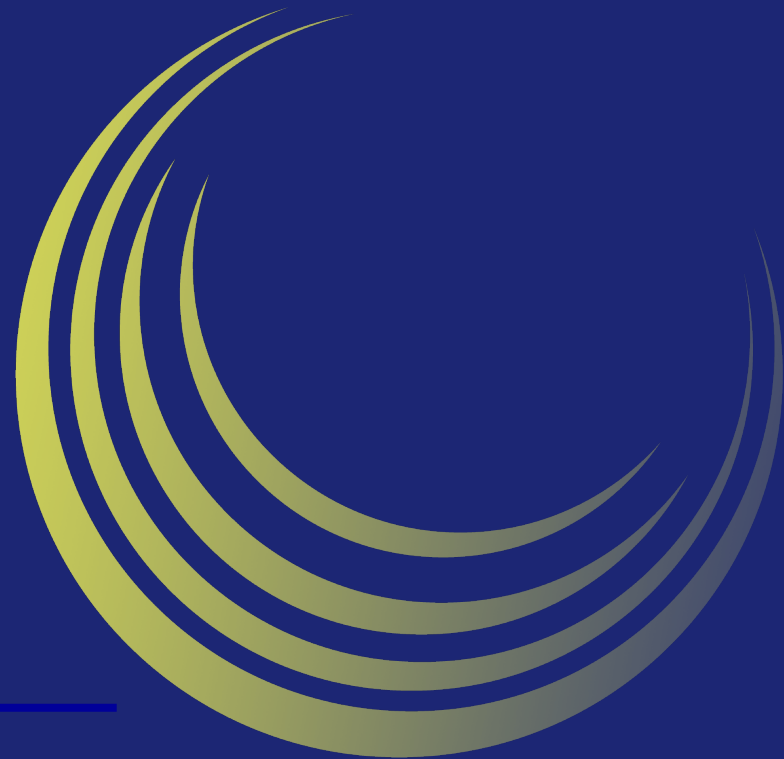


Supernus Pharmaceuticals



Corporate Overview

November 2024

Safe Harbor Statement

This presentation and other matters discussed today or answers that may be given to questions asked include forward-looking statements within the meaning of the federal securities laws. These statements, among other things, relate to Supernus' business strategy, goals and expectations concerning its product candidates, ability to integrate the acquired portfolio into its infrastructure, future operations, prospects, plans and objectives of management. The words "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "plan", "predict", "project", "will", and similar terms and phrases are used to identify forward-looking statements in this presentation. Supernus' operations involve risks and uncertainties, many of which are outside its control, including the risk factors set forth from time to time in Supernus' filings with the U.S. Securities and Exchange Commission (SEC), which could materially affect its results of operations and whether the forward-looking statements ultimately prove to be correct. Supernus assumes no obligation to update any forward-looking statements except as required by applicable law.

Supernus has filed with the SEC reports and other documents required by Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended. Before you purchase any Supernus securities, you should read such reports and other documents to obtain more complete information about the company's operations and business and the risks and uncertainties that it faces in implementing its business plan. You may get these documents for free by visiting EDGAR on the SEC website at <http://www.sec.gov>.

Proven Execution in CNS & ADHD

30+ Years of CNS Experience Including Four Products in ADHD



2005 - Present



Pipeline

SPN-830

SPN-820

SPN-817

SPN-443

SPN-446



1997 - 2005

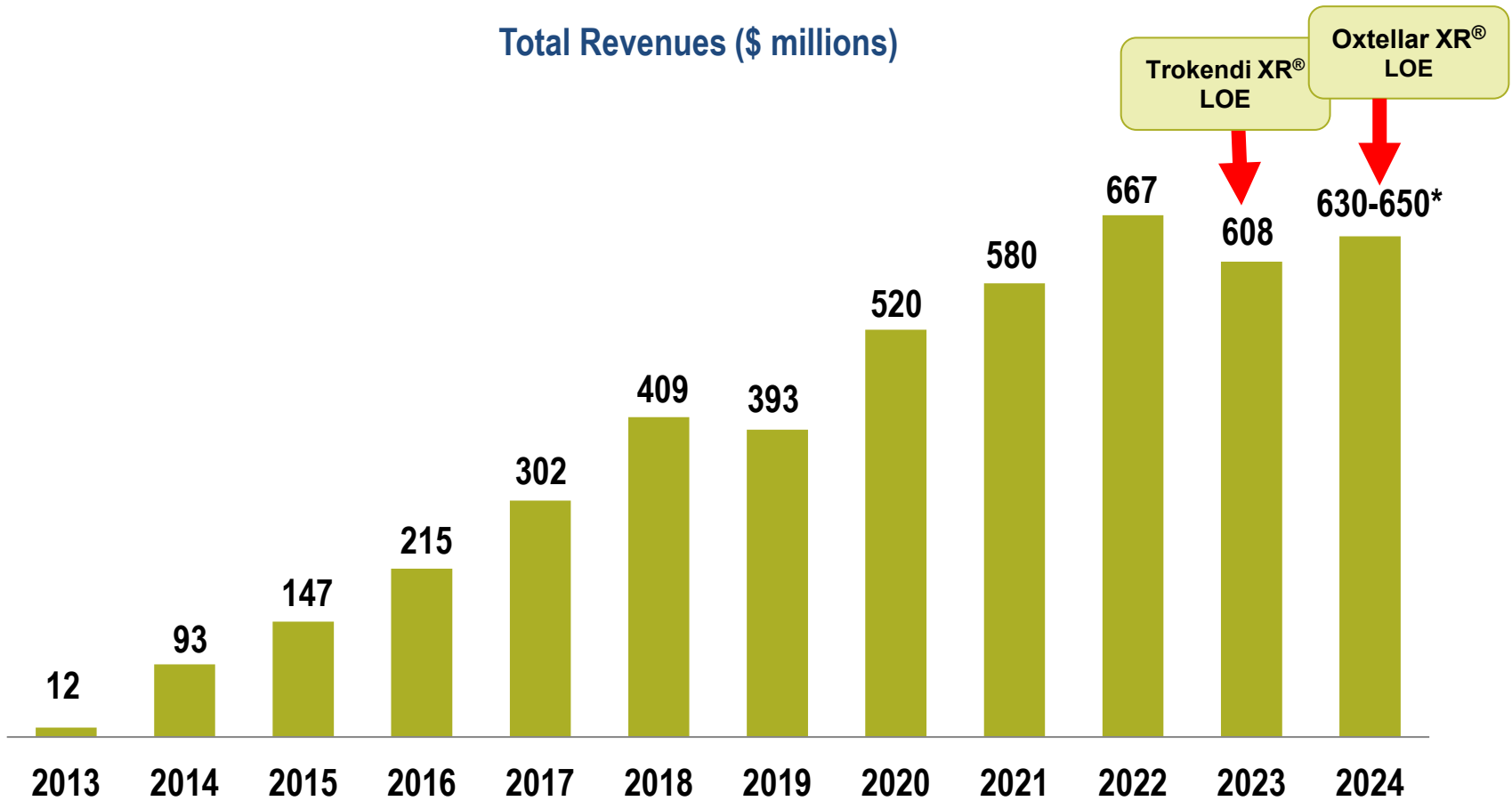


Prior to becoming independent in 2005, Supernus operated as Shire Laboratories, Inc., a division of Shire.
SPN-830, SPN-820, SPN-817, SPN-443, and SPN-446 are product candidates in various stages of development.
All trademarks are the property of their respective owners



Proven Commercial Execution

Total Portfolio Revenue Growth



Year-end 2018 inventory build by distribution channel increased 2018 net sales by approx. \$10 million and negatively impacted 2019 net sales.

*Guidance provided on November 4, 2024

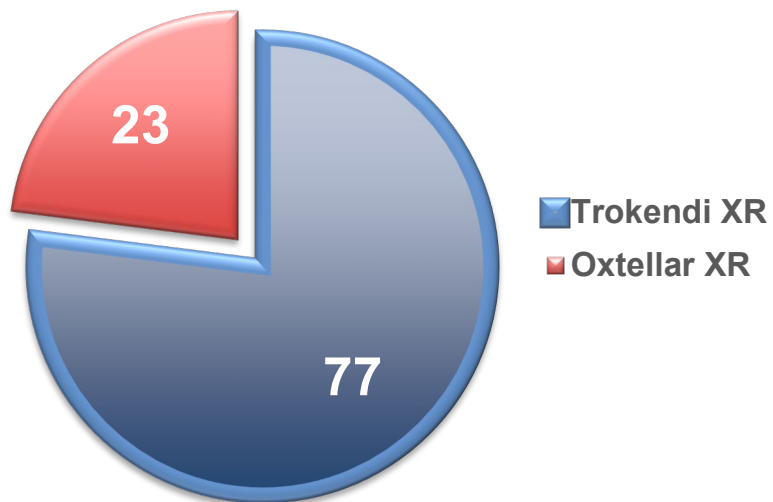
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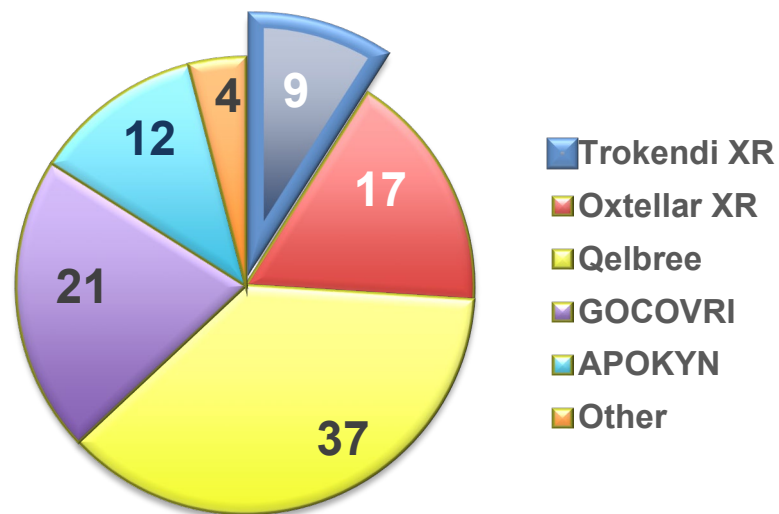
Portfolio Diversification and Management of LOEs

% of Net Sales

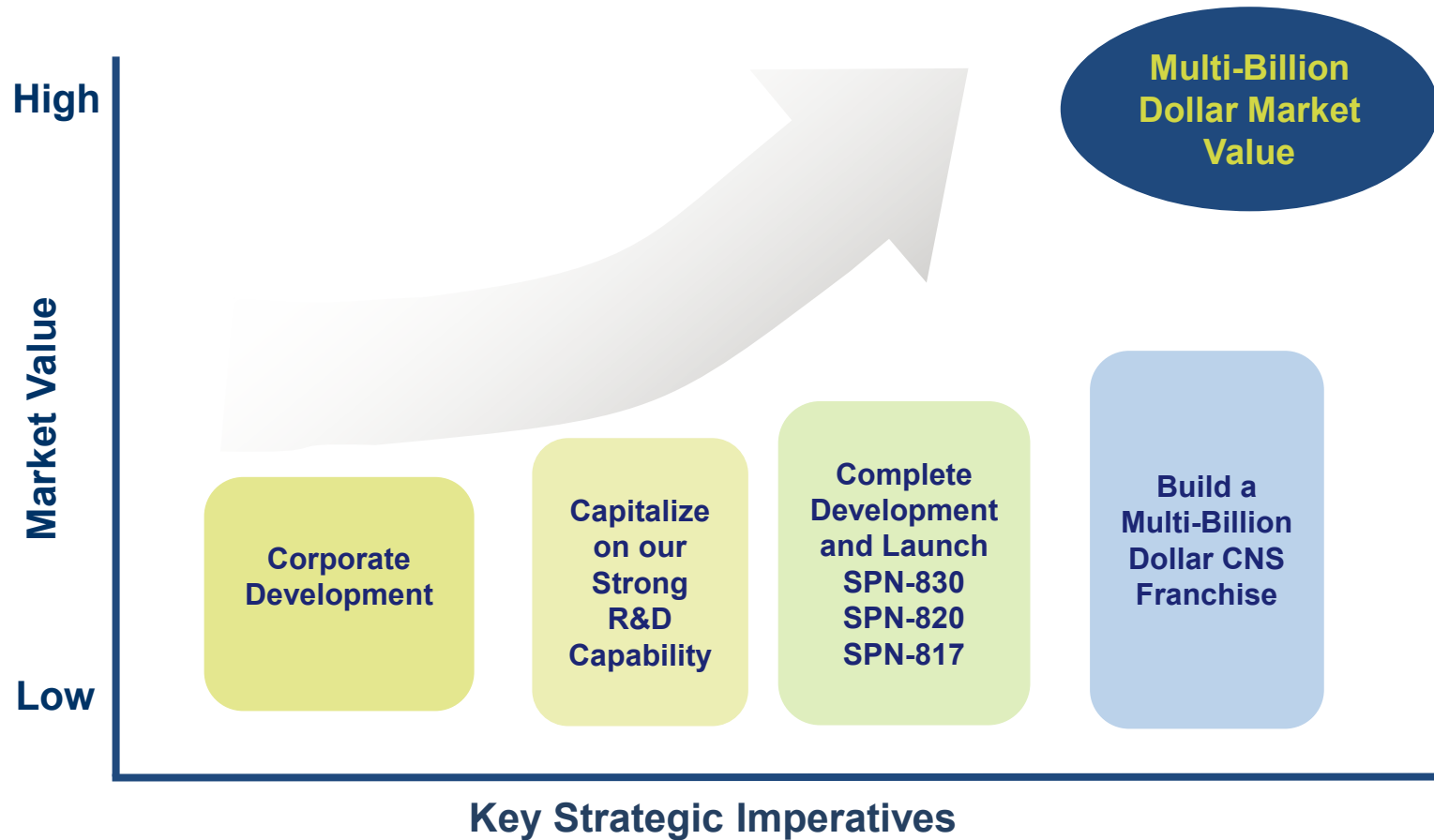
2019



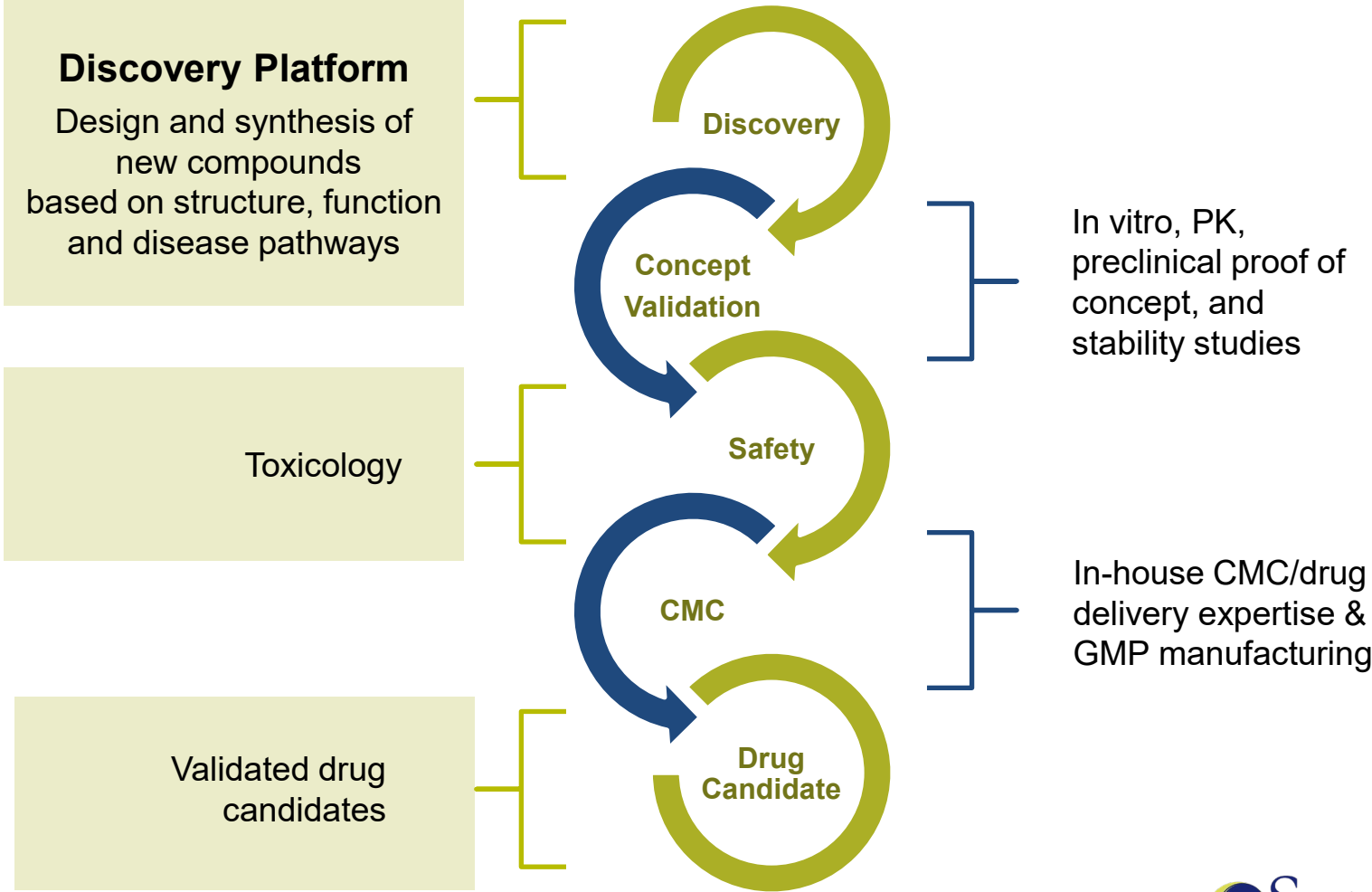
3Q 2024



Strategic Direction



Significant Experience & Capabilities in Drug Development



Robust CNS Pipeline to Drive Long-Term Growth

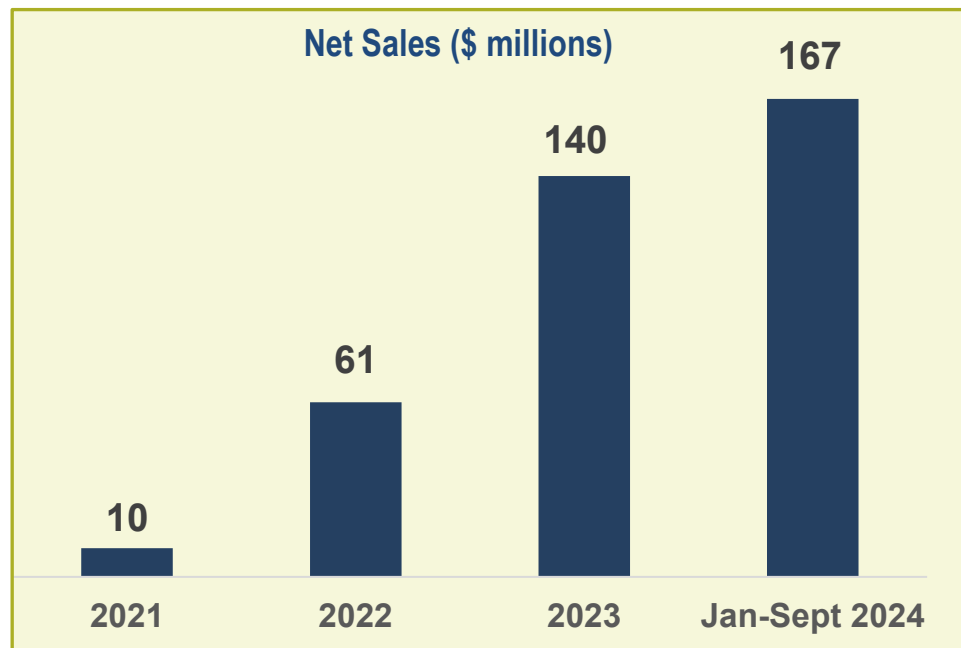
Program	Indications	Discovery	Preclinical	Phase 1	Phase 2	Phase 3	NDA	Market	
SPN-830	PD	▶							
SPN-820	Depression	▶							
SPN-817	Epilepsy	▶							
SPN-443	ADHD/CNS	▶							
SPN-446	CNS	▶							

PD = Parkinson's disease



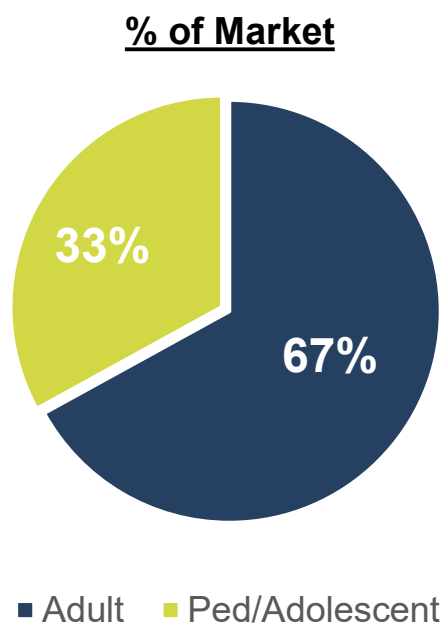
Novel Non-Stimulant ADHD Product

- Launched in May 2021 for patients 6 to 17 years of age and in May 2022 for adult patients
 - Sales force of approximately 240 sales representatives
- IP expirations from 2029-2033



ADHD Market By Patient Population

2023 Total U.S. ADHD Market - 93 Million Prescriptions



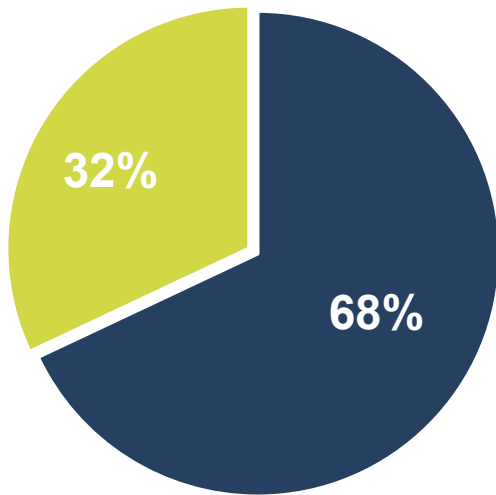
Source: IQVIA

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Source of Usage

68% of Patients Were Prescribed Qelbree As Replacement to Existing Therapy or Add-on



■ Prior ADHD Treatment ■ New Therapy Start

Patients Who Switched to Qelbree Came From:

Stimulants 55%:

- Vyvanse[®]: 24%
- AMP ER/Adderall XR[®]: 17%
- MPH ER/Concerta[®]: 25%
- MPH IR: 8%
- AMP IR: 12%
- DEXMPH/Focalin[®]: 13%
- Other: 1%

Non-Stimulants 45%:

- Atomoxetine/Strattera[®]: 72%
- Guanfacine/Intuniv[®]: 25%
- Other: 3%

Branded ADHD products launched in last 5 years (as of September 2022).

Prior ADHD treatment was defined as patients who switched to Qelbree, or for whom Qelbree was an add-on to current therapy (N=77,657 prescriptions).

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Source: IQVIA NPA market dynamics data, 4/2023 to 3/2024.

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Research Article, Published in CNS Drugs (July 2023)

Extended-Release Viloxazine Compared with Atomoxetine for Attention Deficit Hyperactivity Disorder

Authors: Maxwell Z Price, Richard L Price

- Independent retrospective chart review of 50 patients with ADHD in routine clinical practice
 - Supernus did not provide any support for this research
- Approximately ½ of patients were receiving psychostimulants with a suboptimal response
- Patients taking a psychostimulant were maintained on a stable dose
- Patients received up to 4 weeks of atomoxetine per required insurance prior authorization, were washed out for 5 days, and opted to switch to 4 weeks of viloxazine ER
- ADHD RS-5 and AISRS scales administered at:
 - Baseline
 - At the end of 4-week atomoxetine trial, or earlier if discontinued for AEs
 - At the end of subsequent 4-week Qelbree trial

Research Article, Published in CNS Drugs (July 2023)

Extended-Release Viloxazine Compared with Atomoxetine for Attention Deficit Hyperactivity Disorder

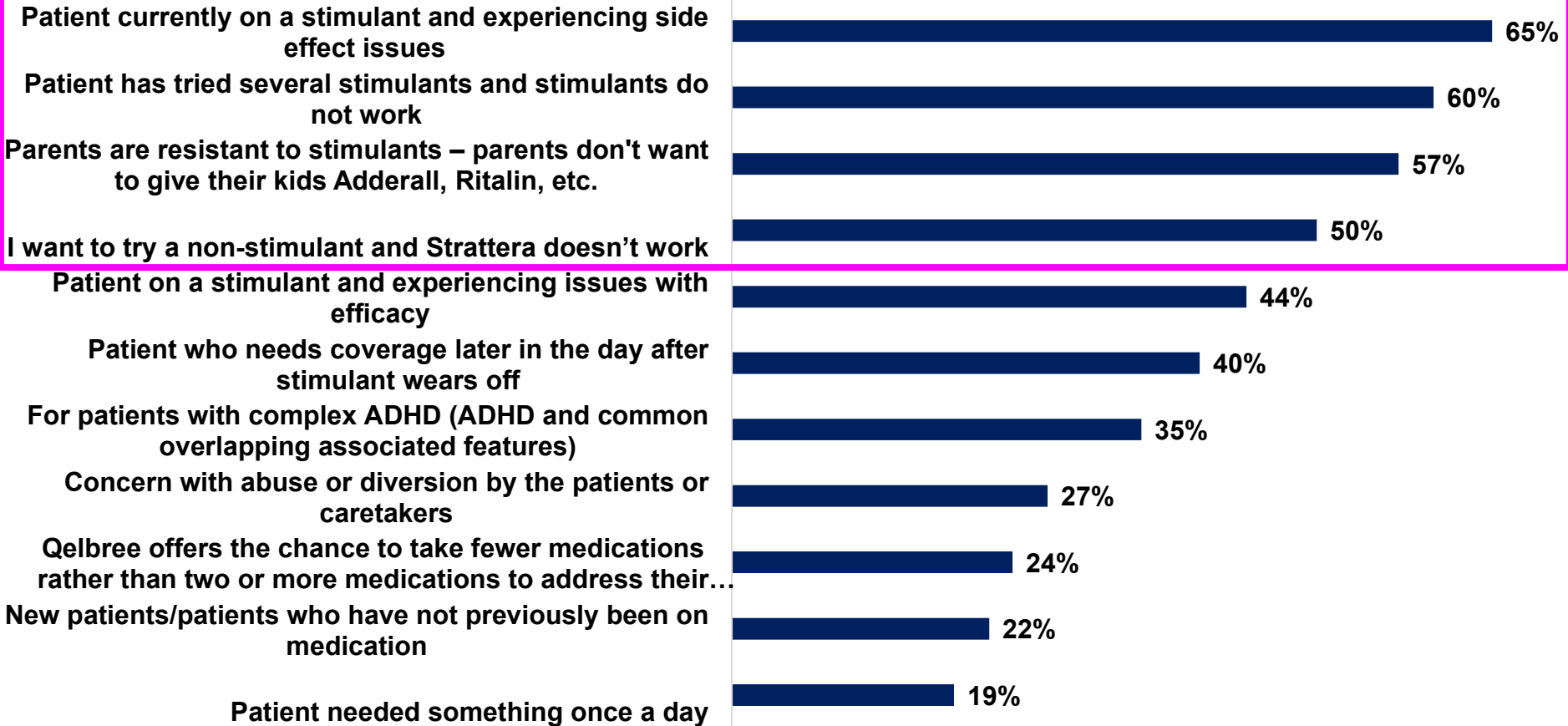
Authors: Maxwell Z Price, Richard L Price

- **Significant improvements** ($p < 0.00001$) were seen on Qelbree compared to atomoxetine on ADHD RS-5 and AISRS scales
- **96%** of patients preferred Qelbree over atomoxetine
- **85%** of patients receiving stimulants chose to taper adjunctive stimulant once stabilized on Qelbree
- **86%** reported positive response by 2nd week of Qelbree
- **4%** discontinued Qelbree vs 36% discontinued atomoxetine due to AEs
- Authors concluded *“Pediatric and adult ADHD patients who have experienced less than optimal response to atomoxetine demonstrate rapid improvement in inattention and in hyperactivity/impulsivity with greater tolerability on extended-release viloxazine.”*

Top Reasons to Try Qelbree®

Patients Having Issues With Stimulants & Looking For an Effective Non-Stimulant

Reasons that led Healthcare Provider to try Qelbree



Source: Internal market research among Qelbree prescribers – n=104.

Q28. Thinking about the patients you have put on Qelbree, what medications were they on/what issues were they having that led you to try Qelbree?



Major Presence in Parkinson's Disease (PD)

1 Million U.S. PD Patients - Market Expected to Grow to \$6.2B by 2026 ⁽¹⁾



Unique Positioning in PD

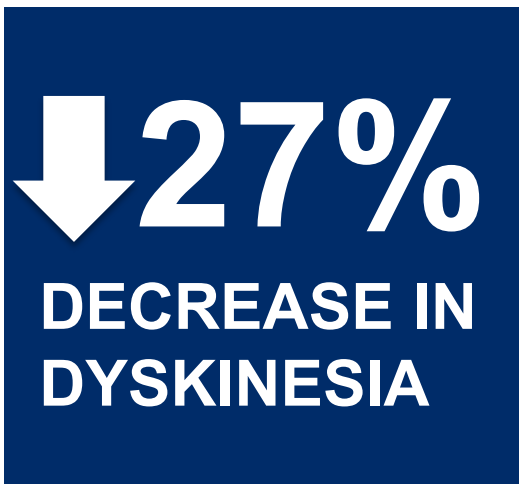
- Only product indicated to treat both dyskinesia and “off” episodes
- Indications:
 - For the treatment of dyskinesia in patients with PD receiving levodopa-based therapy, with or without concomitant dopaminergic medications
 - Adjunctive treatment to levodopa/carbidopa in patients with PD experiencing “off” episodes

Significantly Decreased Dyskinesia and OFF Time, Thereby Significantly Increasing Good ON Time

GOCOVRI achieved reductions in dyskinesia & OFF episodes without having to adjust levodopa dose

Placebo-adjusted, pooled results from pivotal trials*

Primary endpoint



10.1-point reduction in UDysRS score

(-17.7 GOCOVRI vs. -7.6 placebo)^{(1)(2)†}

Secondary endpoints



1-hour decrease

(-0.6 GOCOVRI vs. 0.4 placebo)^{(1)(2)†}



2.4-hour increase

(3.8 GOCOVRI vs. 1.4 placebo)^{(1)(2)†}

(1) Elmer LW, CNS Drugs. 2018.

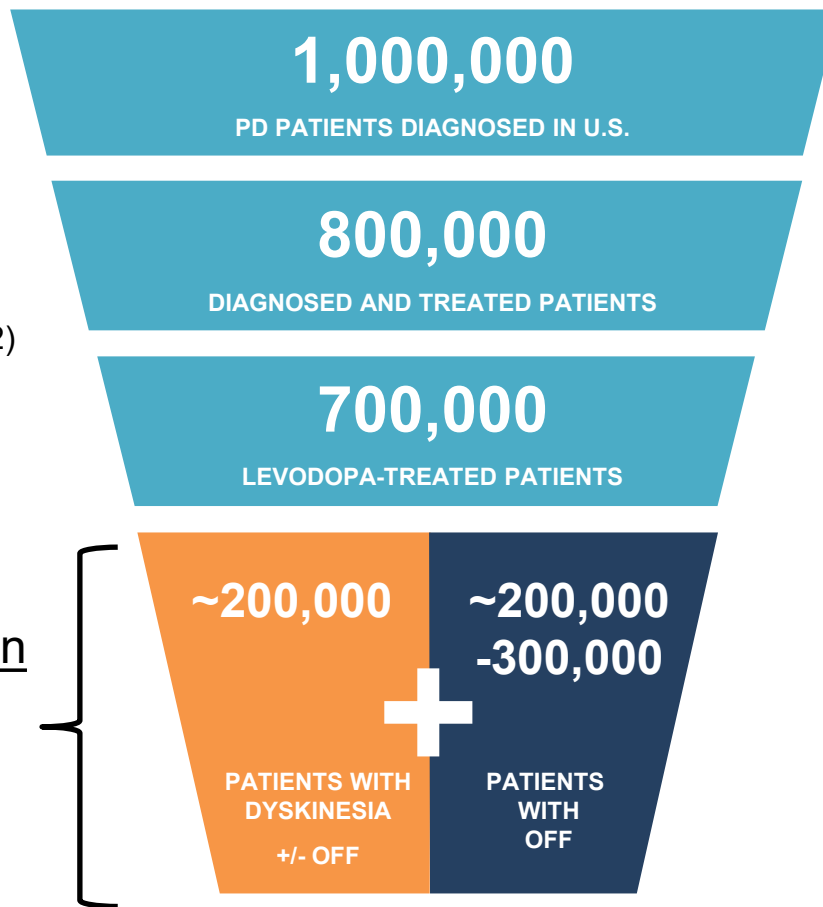
(2) Data on file. Adamas Pharma LLC, Emeryville, CA.

* Pooled results from 2 independent positive, pivotal, Phase 3, randomized, placebo-controlled trials (Study 1 and Study 2) in PD patients on levodopa. Study 1, a 24-week study, was conducted in 121 PD patients with dyskinesia (GOCOVRI [n = 63], placebo [n = 58]). Study 2, a 12-week study, was conducted in 75 PD patients with dyskinesia (GOCOVRI [n = 37], placebo [n = 38]).

† In Study 1, GOCOVRI reduced the UDysRS total score by 15.9 points (vs 8.0 with placebo) (P = 0.0009), decreased OFF time by 0.6 hours (vs an increase of 0.3 hours with placebo) (P = 0.0171), and increased GOOD ON time by 3.6 hours (vs 0.8 hours with placebo) (P < 0.0001) from baseline. In Study 2, GOCOVRI reduced the UDysRS total score by 20.7 points (vs 6.3 with placebo) (P < 0.0001), decreased OFF time by 0.5 hours (vs an increase of 0.6 hours with placebo)

Significant Target Patient Population

Over 50% of people with PD experience OFF episodes, dyskinesia or both within 5 years, and up to 100% after 10 years ⁽¹⁾⁽²⁾



GOCOVRI potential addressable U.S. patient population

400,000 to 500,000 patients⁽³⁾

(1) Kim H-J, et al., Mov Disord, 2020.

(2) Mizuno Y et al., Journal of Neural Transmission, 2018

(3) Estimated based on market research.

SPN-830

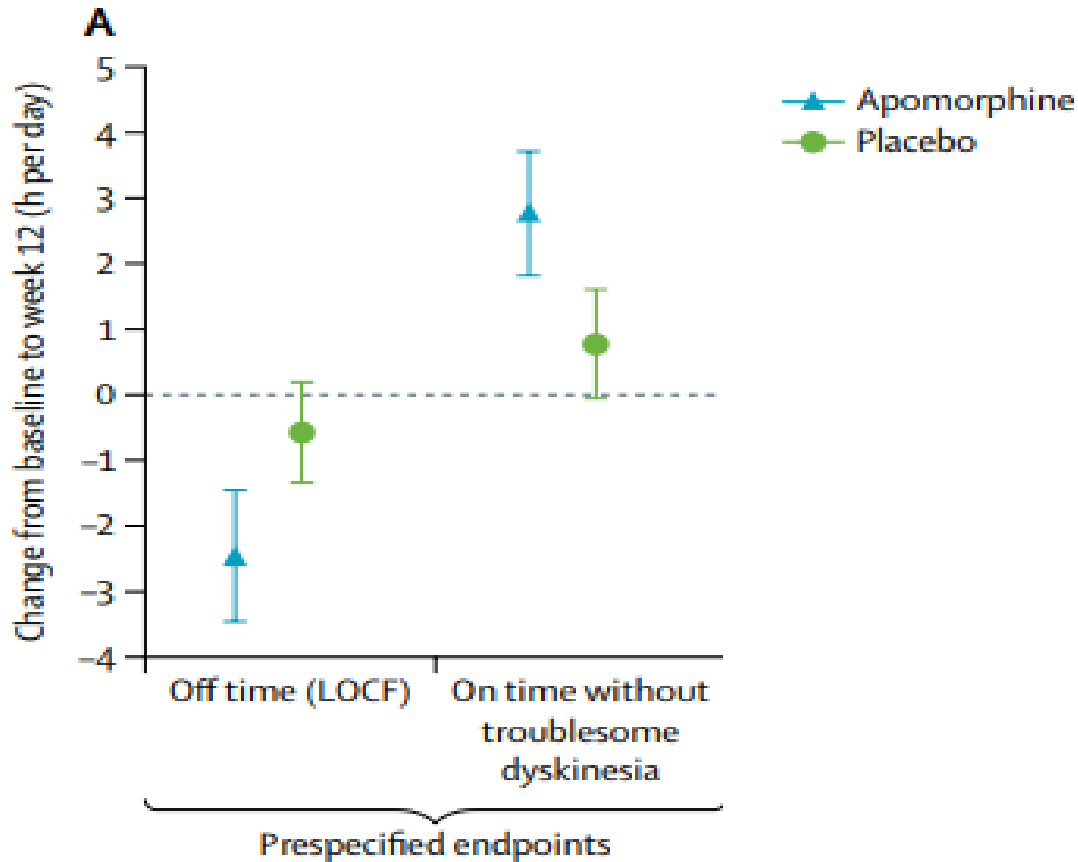
Novel Apomorphine Subcutaneous Injection Device

- Non-invasive dopaminergic stimulation therapy for continuous treatment of ON-OFF episodes in PD
- Currently available options
 - Gastro-intestinal surgically implanted levodopa/carbidopa infusion
 - Deep brain stimulation
- FDA PDUFA goal date of February 1, 2025
- Projected US peak sales in the range of \$200-\$300 million

SPN-830

Novel Apomorphine Subcutaneous Injection Device

TOLEDO Phase 3 Study Results



Primary Endpoint

SPN-830 demonstrated a 2.47 hours per day reduction in OFF time compared to placebo (0.58); $p= 0.0025$

Regina Katzenschlager et al, The Lancet Neurology. 2018;Vol 17(9):749-759

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SPN-820

Novel MOA for Treatment of Depression

- Oral product candidate for the treatment of depression
- Novel, first in class, intracellular modulator of mTORC1
 - Restores mTORC1 synaptic signaling through a unique intracellular mechanism
- Increased dendritic spines in animal model supporting neuroplasticity
- Prior proof of concept Phase 1b study demonstrated significantly improved depressive symptoms 4 hours after a single dose

Mechanism of Action = MOA

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SPN-820

Highly Differentiated Emerging Clinical Profile

Completed a Phase 2a exploratory open-label study in adults with major depressive disorder (MDD)

- Rapid and substantial decrease (as early as 2 hours) in depressive symptoms
 - Clinically meaningful change in both HAM-D6 and MADRS
- Single dose lasting 72 hours
- Rapid MADRS response rate ($\geq 50\%$ reduction) at 4 hours in 50% of participants and increasing to 84% by day 10
- Rapid remission (MADRS ≤ 10), at 4 hours in 35% of participants and increasing to 63% by day 10
- Substantial reduction (80%) in suicidal ideation
- Well-tolerated with few AEs. Low discontinuation rate of 2.5% due to AEs

Montgomery-Åsberg Depression Rating Scale (MADRS)
Hamilton Depression Rating Scale-6 (HAM-D6)
Adverse Events (AEs)

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SPN-820 – Phase 2a

Open-Label Adjunctive Design

- Open-label, single group, 2400 mg single dose on Days 1, 4, and 7
- Adults (aged 18 to 65 years) with MDD
 - MADRS total score ≥ 22 at screening and baseline
 - Clinical Global Impression-Severity of Illness (CGI-S) ≥ 4 (moderately ill or worse) at screening and baseline
 - Maintained on a stable, approved dose of antidepressant therapy (ADT) for current major depressive episode ≥ 6 weeks and remained on the ADT during the study
- N=40

SPN-820 – Phase 2a

Efficacy Endpoints

- Primary endpoint (at each timepoint):
 - Change from Baseline (CFB) in HAM-D6 total score
- Secondary efficacy endpoint (at each timepoint):
 - CFB in the MADRS total score

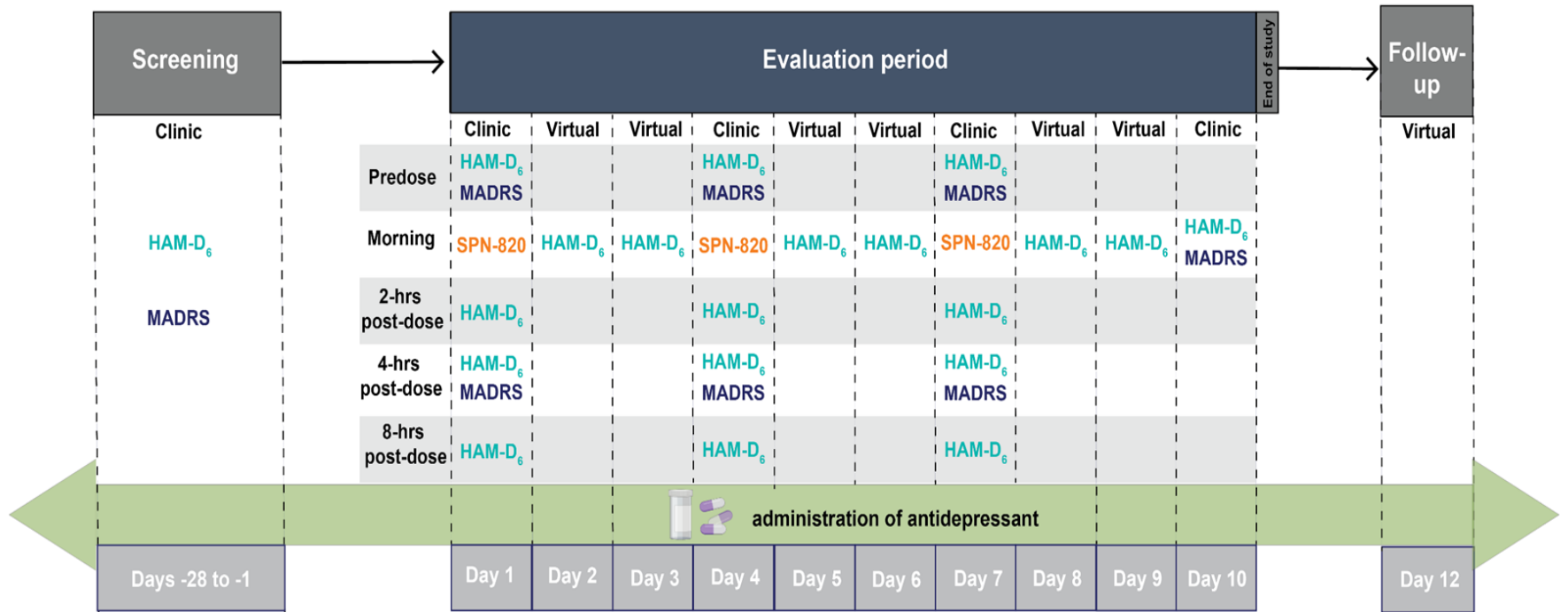
SPN-820 – Phase 2a

Safety Endpoints

- Adverse Events (AEs)
- Suicidal ideation and behaviors measured by the Columbia Suicide Severity Rating Scale (C-SSRS) score
- Clinician Administered Dissociative State Scale (CADSS) score
- Brief Psychiatric Rating Scale Positive Total Score (BPRS+) score

SPN-820 – Phase 2a

Open-Label Study Schematic



SPN-820 – Phase 2a

Subject Demographics

Parameter	Mean ± Standard Deviation (Min, Max) or (%) N=40
Age (years)	44.7 ± 15.39 (18, 64)
Sex	<ul style="list-style-type: none">• Female (67.5%)• Male (32.5%)
Race	<ul style="list-style-type: none">• White (80.0%)• Black (7.5%)• Asian (10.0%)• Unknown (2.5%)
Weight (kg)	81.8 ± 19.92 (48.4, 126.9)
BMI (kg/m ²)	28.6 ± 5.43 (19.4, 39.5)

SPN-820 – Phase 2a

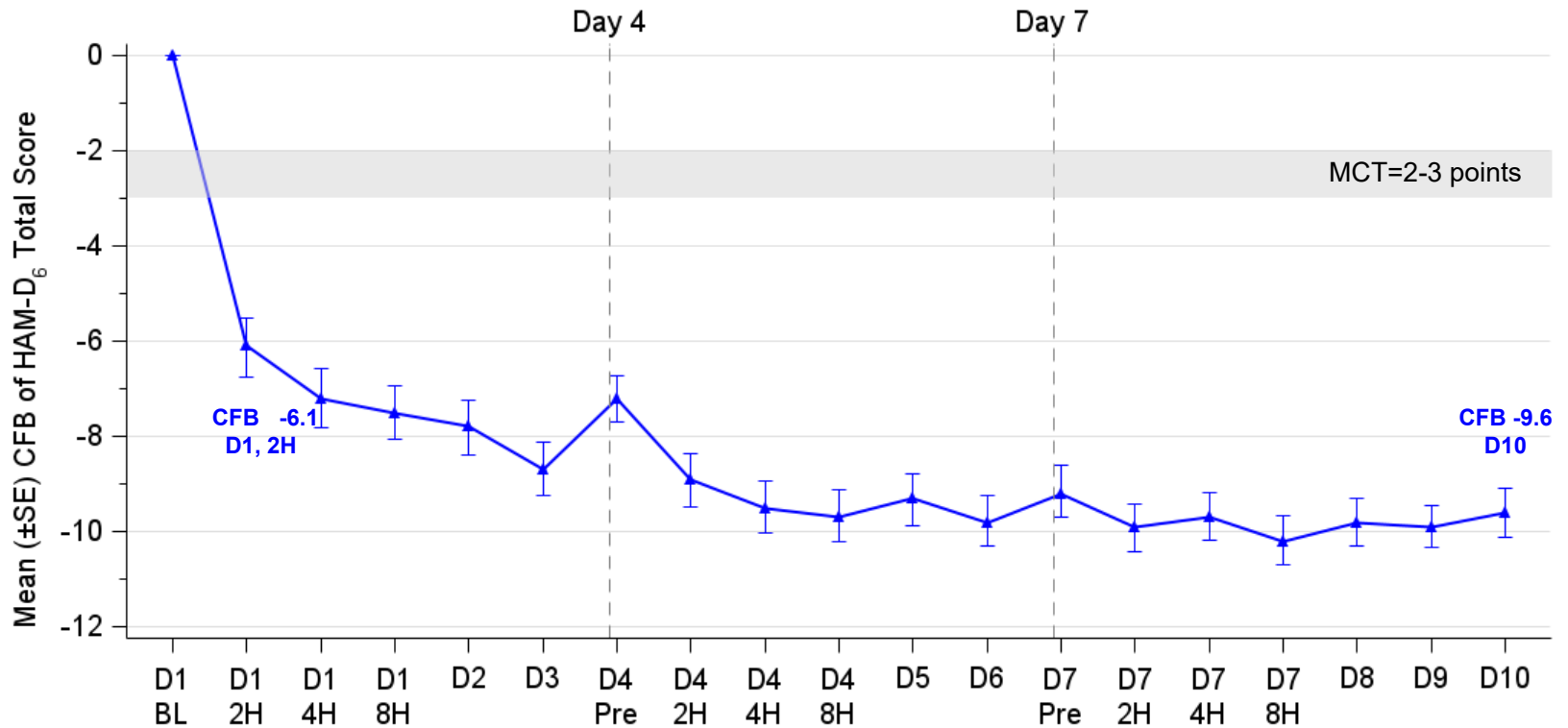
Baseline Demographics

Severity Assessment	Mean \pm Standard Deviation (Min, Max)
HAM-D ₆ Total Score	13.6 \pm 1.69 (9, 17)
MADRS Total Score	33.1 \pm 5.41 (22, 42)
CGI-S Score	4.6 \pm 0.64 (4, 6)

HAM-D₆ score of 13-22 is severe, 9-12 is moderate
MADRS score of 34-60 is severe, 20-33 is moderate
CGI-S score of 4 is moderate, 5 is marked

SPN-820 – Phase 2a

Rapid Decrease in HAM-D6 Scores

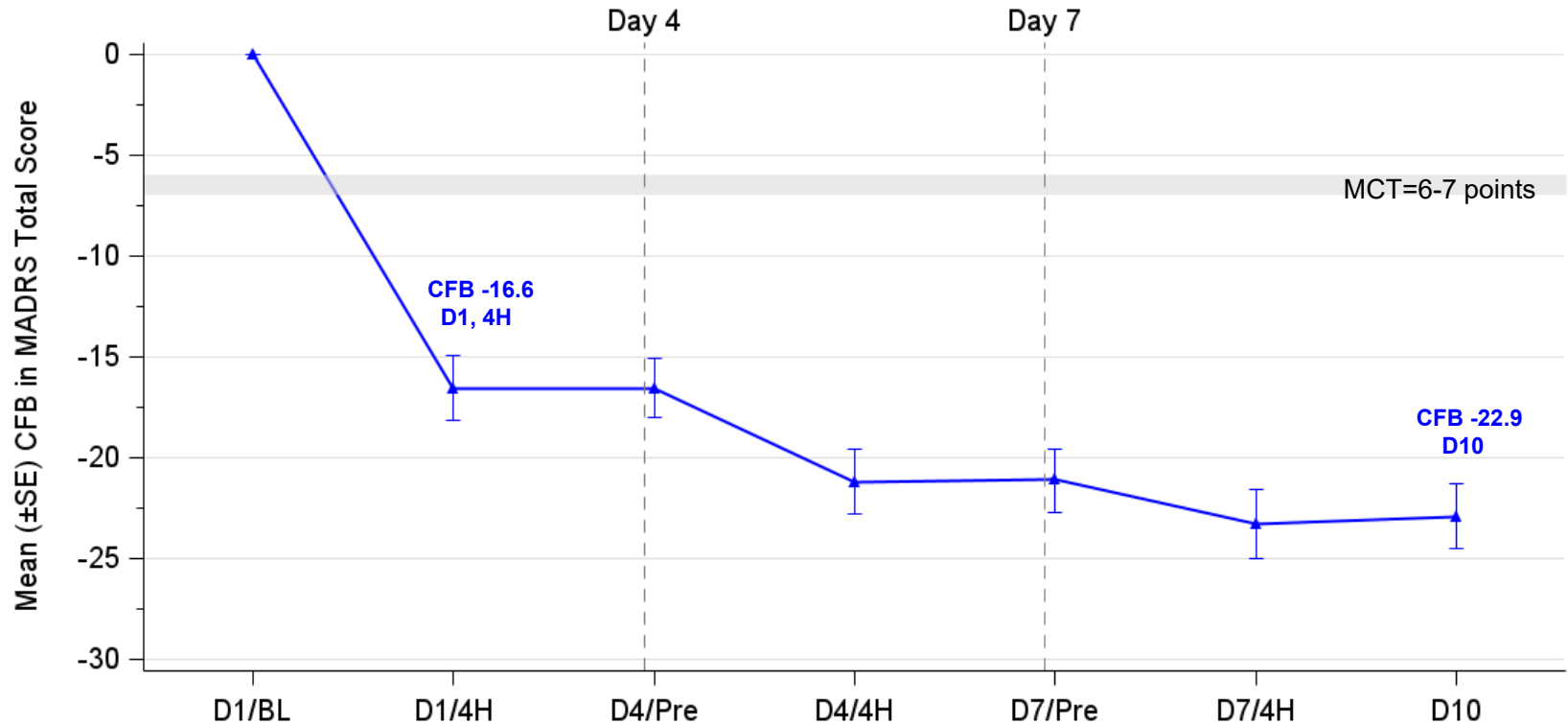


D: Day; BL: Baseline; H: Hour; Pre: Pre-dose; SE: Standard Error; CFB: Change from Baseline; MCT: Meaningful Clinical Threshold.



SPN-820 – Phase 2a

Rapid Decrease in MADRS Scores



D: Day; BL: Baseline; H: Hour; Pre: Pre-dose; SE: Standard Error; CFB: Change from Baseline; MCT: Meaningful Clinical Threshold.



SPN-820 – Phase 2a

Summary of Treatment-Emergent Adverse Events (TEAEs)

Category	Subjects (N=40) n (%)
TEAE	25 (62.5%)
Related TEAE	23 (57.5%)
Serious Adverse Event (SAE)	0
Severe TEAE	0
TEAE leading to withdrawal	1 (2.5%)*

*Increase in severity of hypertension on Day 4 which was assessed by the principal investigator as moderate in severity and not related to the study medication.

SPN-820 – Phase 2a

Well-Tolerated with Few AEs

Adverse Event	Subjects (N=40)
Headache	8 (20.0%)
Nausea	8 (20.0%)
Somnolence	6 (15.0%)
Dizziness	4 (10.0%)
Cognitive disorder	2 (5.0%)
Dry mouth	2 (5.0%)
Fatigue	2 (5.0%)
Nasal congestion	2 (5.0%)
Paresthesia oral	2 (5.0%)

- CADSS and BPRS+ assessments showed no changes regarding dissociative events or psychosis

SPN-820 – Phase 2a

Substantial Decrease in Suicidal Ideation

- Suicidal ideation decreased by 80%
 - 5/40 (12.5%) with suicidal ideation at baseline
 - 1/38 (2.6%) with suicidal ideation at Day 10
- No suicidal behavior during the study

SPN-820

Phase 2b Study in TRD

Study Design

- Multicenter, randomized, double-blind, placebo-controlled, parallel design of **adjunctive therapy**
- Flexible dose: Treatment starts at **1600 mg/day** and tapered down to **800 mg/day**
- 227 randomized (target 236)
Enrollment expected to complete in November 2024
- Up to 50 sites
- Duration:
 - Screening period: up to 6 weeks
 - Treatment: 5 weeks
- Topline data expected in 1H 2025

Objectives

- Primary efficacy: MADRS
- Key secondary: CGI-S
- HAM-D6
- Onset of effect
- Depression symptoms response and remission
- Individual disability
- Anxiety
- Rate of improvement
- Safety and tolerability

SPN-817

Only AChE Inhibitor in Development for Focal Seizures

- Huperzine A is a potent, selective and reversible acetylcholinesterase (AChE) inhibitor, an enzyme that metabolizes acetylcholine (ACh) after synaptic release^{1,2}
- Inhibition of AChE increases extracellular levels of ACh
- ACh augmentation activates cholinergic pathways in different cellular types in the brain
 - Restores excitatory/inhibitory balance for seizure control
- Broad and potent anti-seizure effect in different seizure and genetic models of epilepsy¹⁻⁴

¹ Supernus data on file

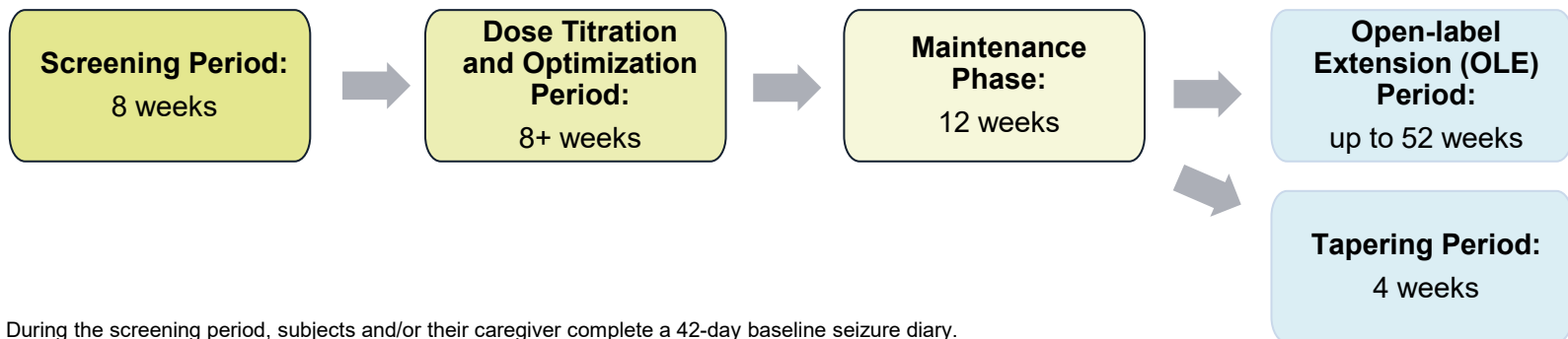
² Damar et al. (2016). *Expert Rev Neurother*, 16(6), 671-680

³ Wong et al (2016). *Front Pharmacol*, 7, 357

⁴ Wong et al (2021). *Neuropsychopharmacology*, 46(11), 2011-2020

SPN-817: Phase 2a Study Design

- Design: Phase 2a, open-label, flexible-dose, safety and tolerability exploratory study
- Sample size: 41 adult subjects with treatment resistant seizures
 - At least 4 motor seizures during screening - median baseline seizure frequency was 11.3
 - Took at least one concomitant anti-seizure medication (ASM), no upper limit - average number of concomitant ASMs was 3.4 (range 1-6)
- Study sites: 8 sites in Australia
- SPN-817 administration: Orally, twice daily, 0.25 mg – 4.0 mg



During the screening period, subjects and/or their caregiver complete a 42-day baseline seizure diary. The baseline seizure frequency is normalized to a 28-day period.

SPN-817: Phase 2a Endpoints

- Primary Safety Endpoints
 - Adverse events (AEs)
 - AEs leading to discontinuation
- Key Secondary/Exploratory Endpoints
 - Percent CFB in quantifiable motor seizure frequency per 28 days throughout SPN-817 dosing during maintenance period/OLE
 - Treatment response defined as $\geq 30\%$, $\geq 50\%$, and $\geq 75\%$ reduction in quantifiable motor seizure frequency per 28 days relative to the baseline period
 - CFB in Clinical Global Impression-Severity (CGI-S) scores
 - CFB in cognitive profile as assessed by EpiTrack[®]

EpiTrack[®] is a cognitive screening tool designed for patients with epilepsy to evaluate cognitive effects of antiseizure medications
Open Label Extension = OLE

SPN-817: Phase 2a

Safety and Tolerability

Category	Titration Period (n=41) n (%)	Maintenance Period (n=26) n (%)
Subjects with at least one treatment related TEAE	39 (95.1)	13 (50.0)
Subjects with any treatment related serious AE*	1 (2.4)	0
Maximum severity of treatment related TEAE**		
<i>Mild</i>	19 (46.3)	8 (30.8)
<i>Moderate</i>	20 (48.8)	5 (19.2)
<i>Severe</i>	0	0
Any treatment related TEAE leading to withdrawal of study drug/withdrawal from study	12 (29.3)	2 (7.7)
Any AE leading to death	0	0

Safety Population (Main Study)

*One subject had a Serious AE of dizziness and nausea that led to hospitalization at 0.25mg BID of SPN-817. Subject recovered.

**Subjects are counted only once at the worst severity. If a severity designation is missing, it will be considered as severe.

The Main Study consists of relevant data from Screening, Titration/Optimization, and Maintenance.

Treatment Emergent Adverse Event (TEAE) is an adverse event (AE) with a start date on or after the first dose of study medication is taken, or that worsened following first administration of study medication.

Treatment Related AEs are those reported as Definitely Related, Possibly Related, and those with no relatedness reported.



SPN-817: Phase 2a

Safety and Tolerability; Treatment Related TEAEs ($\geq 5\%$ incidence)

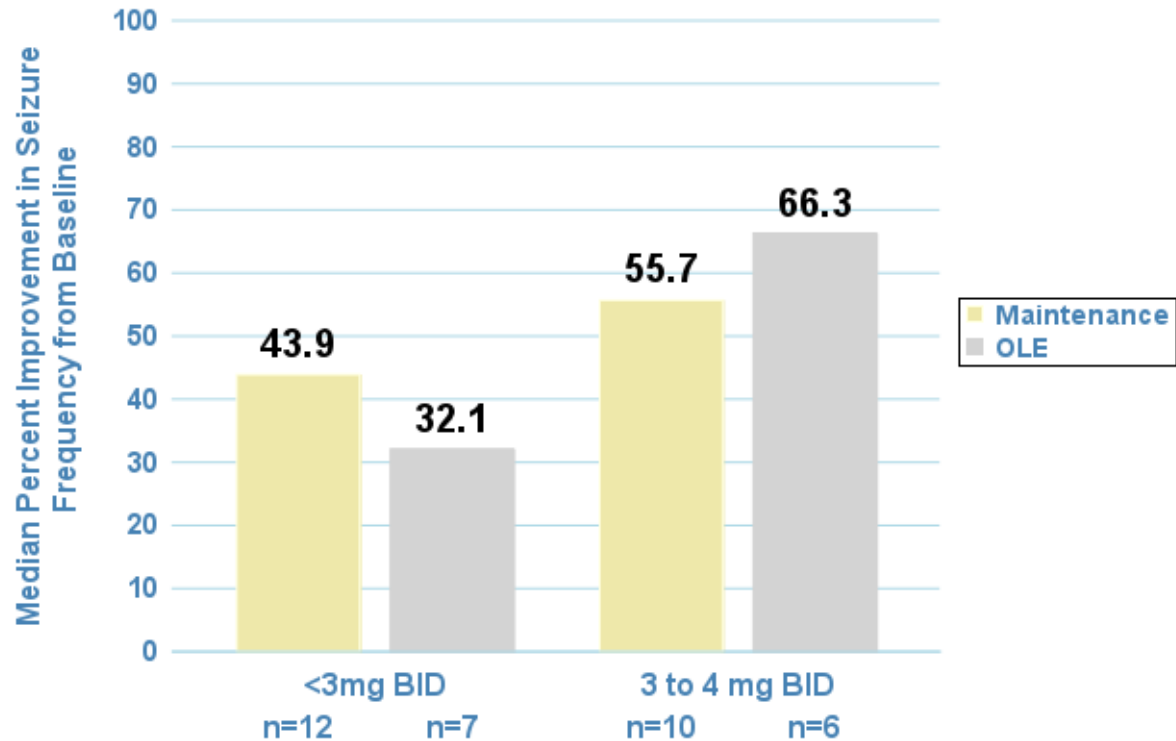
Preferred Term	Titration Period (n=41) n (%)	Maintenance Period (n=26) n (%)
Subjects with at least one TEAE	39 (95.1)	13 (50.0)
Nausea*	20 (48.8)	2 (7.7)
Diarrhoea	10 (24.4)	3 (11.5)
Dizziness	8 (19.5)	1 (3.8)
Headache	8 (19.5)	1 (3.8)
Decreased appetite	8 (19.5)	0
Fatigue	5 (12.2)	1 (3.8)
Insomnia	6 (14.6)	0
Vomiting	5 (12.2)	2 (7.7)
Vision blurred	5 (12.2)	0
Somnolence	4 (9.8)	0
Irritability	3 (7.3)	0
Tremor	2 (4.9)	1 (3.8)
Weight decreased	1 (2.4)	2 (7.7)

*Anti-emetics utilized in 6 subjects in response to reported treatment related emetic events (nausea and/or vomiting) after taking SPN-817. AEs were coded using MedDRA version 25.0. Subjects are counted once for each preferred term.

SPN-817: Phase 2a

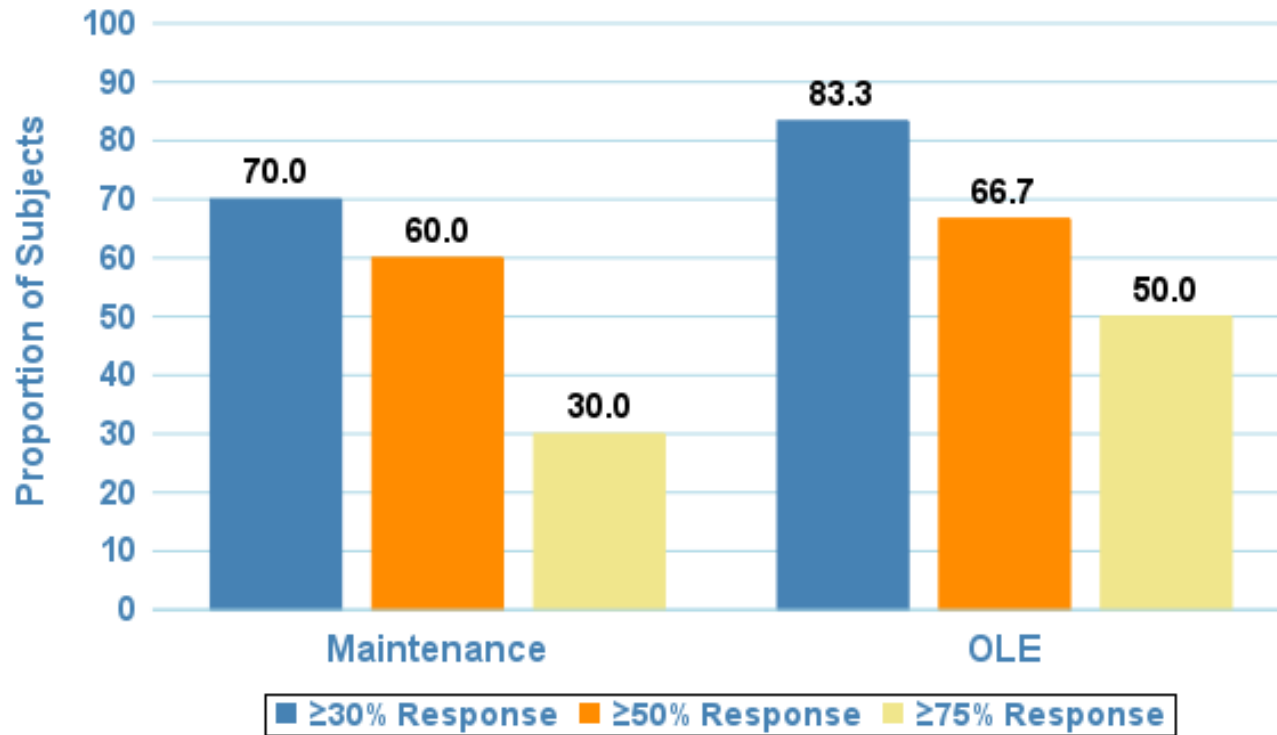
Efficacy in Focal Seizures for Maximum Dose 3-4 mg BID Group

Percent Reduction from Baseline in Seizure Frequency



SPN-817: Phase 2a

Response Rate in Focal Seizures for Max. Dose 3-4 mg BID Group



CGI and EpiTrack Results in Focal Seizures

Secondary Outcome Measure	Baseline Mean (SD)	End of Maintenance Mean (SD)	End of Maintenance CFB Mean (SD)
CGI-S Score,	3.6 (1.24)	2.7 (0.81)	-0.7 (1.20)

- EpiTrack[®] assessment of cognition
 - 12/16 (75%) improved or unchanged
 - 3 subjects improved from “significantly impaired” cognition (EpiTrack score ≤ 28) at baseline to “average” cognition (EpiTrack score of 32-38) at the end of maintenance period

SPN-817: Summary

Phase 2a open label data suggest a highly differentiated Clinical Profile

▪ Safety & Tolerability

- Most TEAEs occurred during titration
- Exploring mitigation strategies to minimize discontinuations during titration
- In maintenance period, SPN-817 was well tolerated with 7.7% discontinuation rate due to AEs

▪ Efficacy

- Strong efficacy in focal seizures at the 3mg to 4mg twice daily doses
 - 56% median seizure reduction in maintenance period
 - 66% median seizure reduction in post-maintenance period
 - High response rates in maintenance period
 - 70% of subjects had 30% or more seizure reduction
 - 60% of subjects had 50% or more seizure reduction
 - 30% of subjects had 75% or more seizure reduction

SPN-817: Summary (cont'd)

▪ Efficacy

- High response rates in post-maintenance period
 - 83% of subjects had 30% or more seizure reduction
 - 67% of subjects had 50% or more seizure reduction
 - 50% of subjects had 75% or more seizure reduction
- Seizure Freedom
 - Maintenance period: 10% of subjects who completed a post-baseline seizure diary had at least one four-week seizure free period
 - Post-maintenance period: 17% of subjects had at least one four-week seizure free period

▪ Cognitive Improvement

- 75% of subjects almost equally split between improved or unchanged at the end of maintenance period

▪ Phase 2b Study

- Double-blind placebo-controlled in patients with treatment-resistant focal seizures
- 3mg - 4mg twice daily doses
- Expected to start by year end 2024

Near-Term Milestones

- Interim data from SPN-817 Phase 2a study
- SPN-830 NDA resubmission
- Topline data (all patients) from SPN-817 Phase 2a
- Topline data from SPN-820 Phase 2a in MDD
- Start SPN-817 Phase 2b study
- Topline data from SPN-820 Phase 2b in TRD
- Potential launch of SPN-830 if approved by the FDA

May 2024	✓
3Q 2024	✓
End of 2024	✓
Second Half 2024	✓
Year End 2024	
First Half 2025	
First Half 2025	

Full Year 2024 Financial Guidance¹

	(\$ millions)
Total Revenues (Includes ~\$155M on Trokendi XR and Oxtellar XR)	\$630 - \$650
Combined R&D and SG&A Expenses	\$430 - \$450
Operating Loss - GAAP	\$50 - \$65
Adjustments:	
Amortization of intangible assets	\$78 - \$80
Share-based compensation	\$27 - \$29
Contingent consideration	\$(7) - \$(7)
Depreciation	\$2 - \$3
Operating Earnings - non-GAAP	\$150 - \$170

¹ Guidance as provided on November 4, 2024

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Positioned For Strong Growth

**Growth Potential of Qelbree®
Potential Launch of SPN-830**

Innovative R&D Portfolio

SPN-820	First in Class Novel MOA for Depression
SPN-817	First in Class Novel MOA for Epilepsy
SPN-443	Novel ADHD/CNS

Corporate Development

