LYRA THERAPEUTICS

Creating precisely tuned medicines so patients can breathe freely

BANK OF AMERICA HEALTH CARE CONFERENCE

MAY 14, 2020

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LYRA – UNLOCKING THE ENT MARKET

Innovative Drug Delivery Platform for Continuous Multi-month Release

Differentiated Product Candidate Addressing Large Opportunity

Up to 6-months therapy with 1 administration

~14M Chronic Rhinosinusitis (CRS) patients

No FDA approved medicines for most CRS patients

Compelling Clinical Results

Rapid, clinically meaningful and durable improvement in symptom score observed in Phase 1

90% of CRS patients had improved symptoms at 24 weeks

Phase 2 trial underway in Europe, Australia, New Zealand

Expected Benefit to All Constituents

Effective, long lasting treatment for patients

Straightforward therapy that conforms to ENT practice and provides procedure growth

Strong pharmacoeconomic rationale for payers

Expansion Opportunities

Chronic diseases treatable with ENT delivery

Improve therapeutic properties of known APIs

Prolonged, local delivery for unmet needs

LYRA'S PLATFORM APPROACH PROVIDES:

Current ENT drug treatments…

- Limited ability to access the site of disease
- Exhibit fast clearance from site of delivery
- Have poor patient compliance

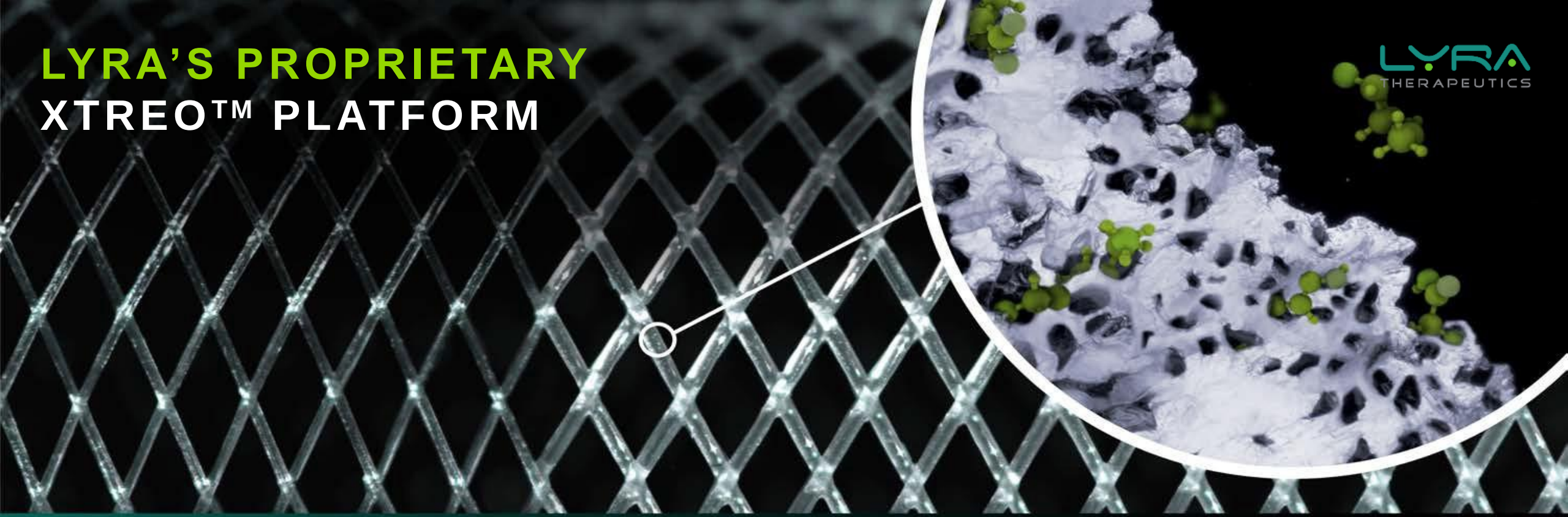
Noninvasive Access
To the site of disease

Prolonged Drug Treatment
Over several months

Consistent Daily Dosing
Does not require patient compliance

Biocompatible, Comfortable and Easy to Use

LYRA'S PROPRIETARY XTREO™ PLATFORM



BIOCOMPATIBLE MESH SCAFFOLD

ENGINEERED ELASTOMERIC MATRIX

VERSATILE POLYMER-DRUG COMPLEX

BIOCOMPATIBLE MESH SCAFFOLD

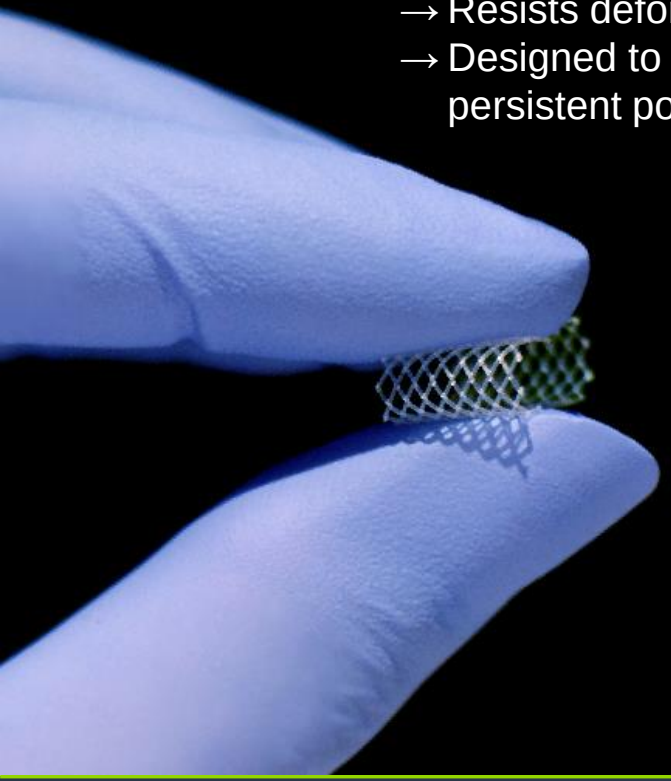
DESIGNED FOR EFFICIENT DRUG DELIVERY

- Designed to optimize surface area for drug release
- Designed to maintain underlying tissue function through open cell design
- Pliable to maximize patient comfort
- Comprised of bioresorbable polymers

ENGINEERED ELASTOMERIC MATRIX
ADAPTS TO NASAL ANATOMY

Shape-memory

→ Adaptive elastic tension
→ Resists deformation
→ Designed to maintain persistent positioning



Designed to be Self-retaining

→ Exerts outward retention force at the target location
→ Designed to remain in place as tissue remodels

VERSATILE POLYMER-DRUG COMPLEX

HAS POTENTIAL TO BE CUSTOMIZED FOR VARIOUS CHRONIC DISEASES

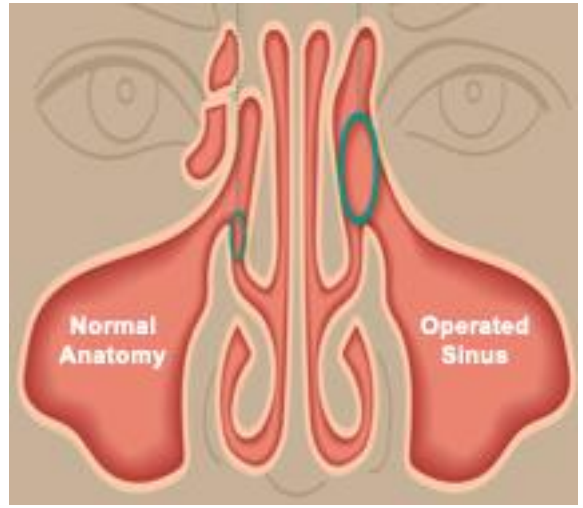
Tunable, Long-acting Drug Release

- **Enabled by proprietary bioresorbable polymer-drug formulations**
- **Designed to deliver continuous multi-month drug release**
- **Potential for development with a wide range of drugs for different therapeutic applications**

FOCUSED INITIAL DEVELOPMENT PIPELINE

Candidate	Pre-clinical	Phase 1	Phase 2	Phase 3	Next Milestone
LYR-210 Long-acting Mometasone Furoate	Chronic Rhinosinusitis **Surgically Naïve Patients**				Phase 2 Topline Data Readout Q4 2020
LYR-220 Long-acting Mometasone Furoate	Chronic Rhinosinusitis **Operated Patients**				Enter Clinic End 2021

LYR-210 | **LYR-220**

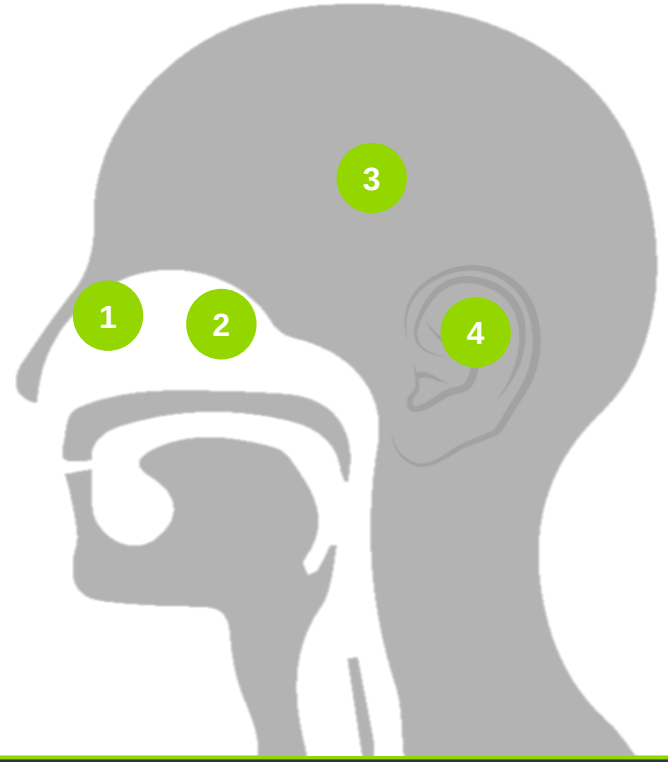


WITH POTENTIAL FOR EXPANSION INDICATIONS

Lyra's XTreo™ platform has potential applications to other indications where long-term delivery would improve local bioavailability and enhance efficacy or safety

Potential Expansion Indications:

1. **Chronic Rhinosinusitis Allergic Rhinitis**
2. **Rare Disorders**
3. **Nasal Delivery for CNS Disorders**
4. **Ear Conditions**



WHAT IS CHRONIC RHINOSINUSITIS (CRS)?

Chronic Rhinosinusitis: The “Unrecognized Epidemic”[1]

CRS Cardinal Symptoms[1]

- **Nasal obstruction and congestion**
- **Facial pain and pressure**
- **Nasal discharge**
- **Olfactory loss**

United States

~14M	CRS Prevalent Patients[2]
~8M	CRS Patients Treated by Physicians Annually[3]
~4M	CRS Patients Failing Medical Management Annually[4]

1) Tan BK et al. Am J Respir Crit Care Med, 2013;188(11):1275–7; 2) Battacharrya. Ann Otol Rhinol Laryngol, 2011; Jul;120(7):423-7; 3) Jang et al. Otolaryngol Head Neck Surg, 2018; 4) Baguley et al. Int Forum Allergy Rhinol, 2014;4(7):525-32

CHRONIC RHINOSINUSITIS

Current Treatment Paradigm

FIRST-LINE THERAPY

Medical Management

Topical steroid sprays and oral steroids

Topical Steroid Sprays

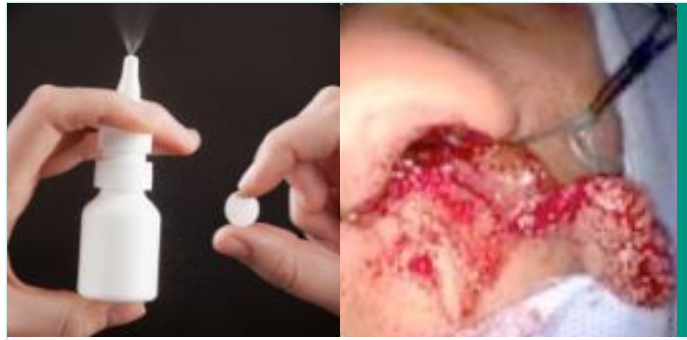
Do not reach nidus of disease deep in the sinuses[1]

Have fast clearance[1]

Poor compliance

Oral Steroids

Systemic complications limit use



SECOND-LINE THERAPY

Surgical Treatments + Medical Management

Endoscopic sinus surgery, topical steroid sprays, and oral steroids

Does not address underlying inflammation[2]

Invasive with significant post-operative pain

Potential for severe complications[2]

Costly at an average of $14K per surgery[3]

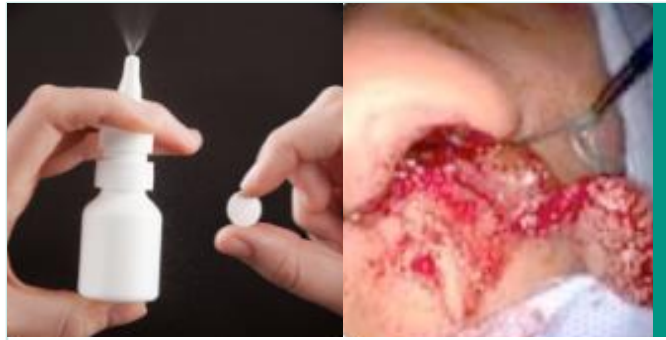
1) Emanuel, I. A., et al. American Journal of Rhinology & Allergy, 2014; 28(2), 117–121; 2) Bachert, C., Int Arch Allergy Immunol, 2011; 155(4): p. 309-21; 3) Velez FF et al. Value in Health , 2018; S13, S1-S68

CHRONIC RHINOSINUSITIS

Performance of Current Treatments

FIRST-LINE THERAPY

Medical Management



SECOND-LINE THERAPY

Surgical Treatments + Medical Management

of patients fail medical management[1]

65%

have recurrent CRS[2]

20%

require revision surgery[3]

100%

require ongoing medical management[4]

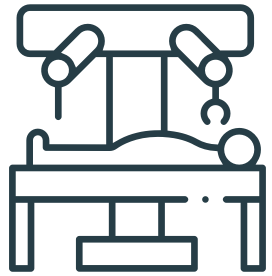
1) Young et al. Allergy Rhinol, 2012; 3:e8-e12; 2) Schaitkin et al. Laryngoscope, 1993; 103; 3) Stein et al. Laryngoscope,2018; 128(1): 31–36; 4) Rosenfeld et al. Otolaryngology–Head and Neck Surgery, 2015; 152(2S)

CHRONIC RHINOSINUSITIS

Unmet Need

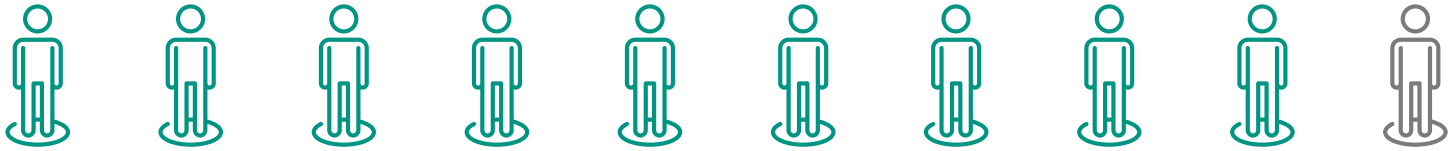
4M

fail medical management



400K

get surgery[1]



Up to 90%

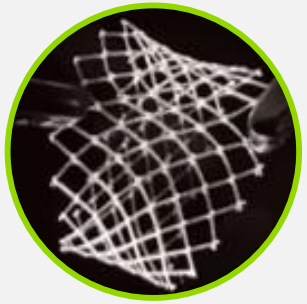
of patients are left with suboptimal treatment options

1) Young, L. Cet al. Allergy & Rhinology, 2012; 3(1), 8–12

LYR-210 & LYR-220

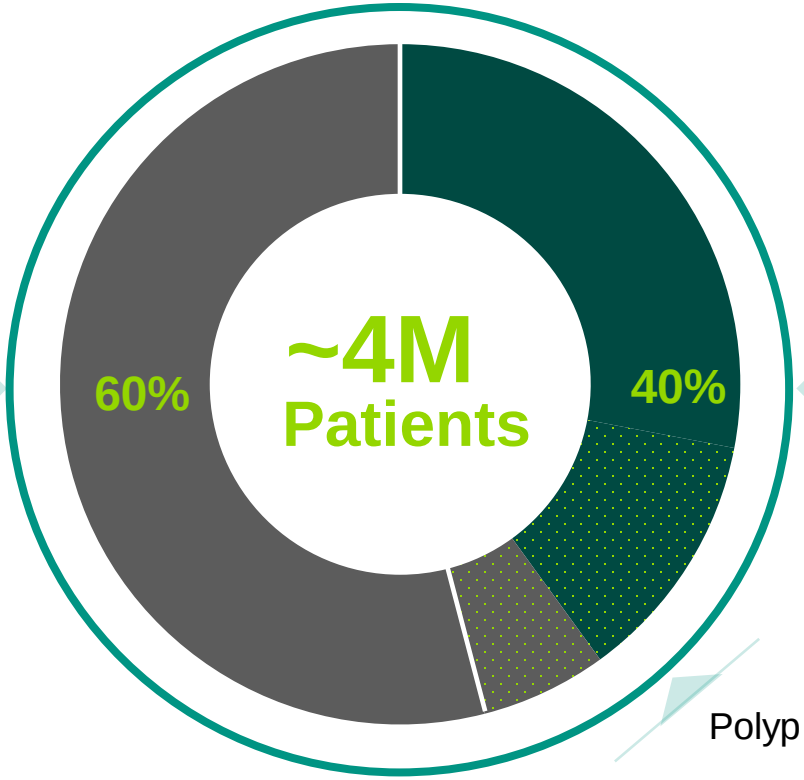
Positioned to Address CRS Patients Treated by an ENT Regardless of Polyp Status

For Surgically Naïve CRS Patients



LYR-210

Mometasone Furoate

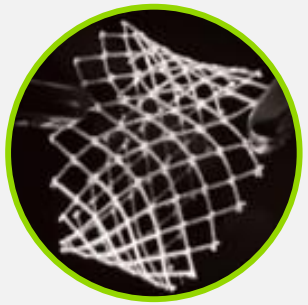


For Operated CRS Patients

LYR-220

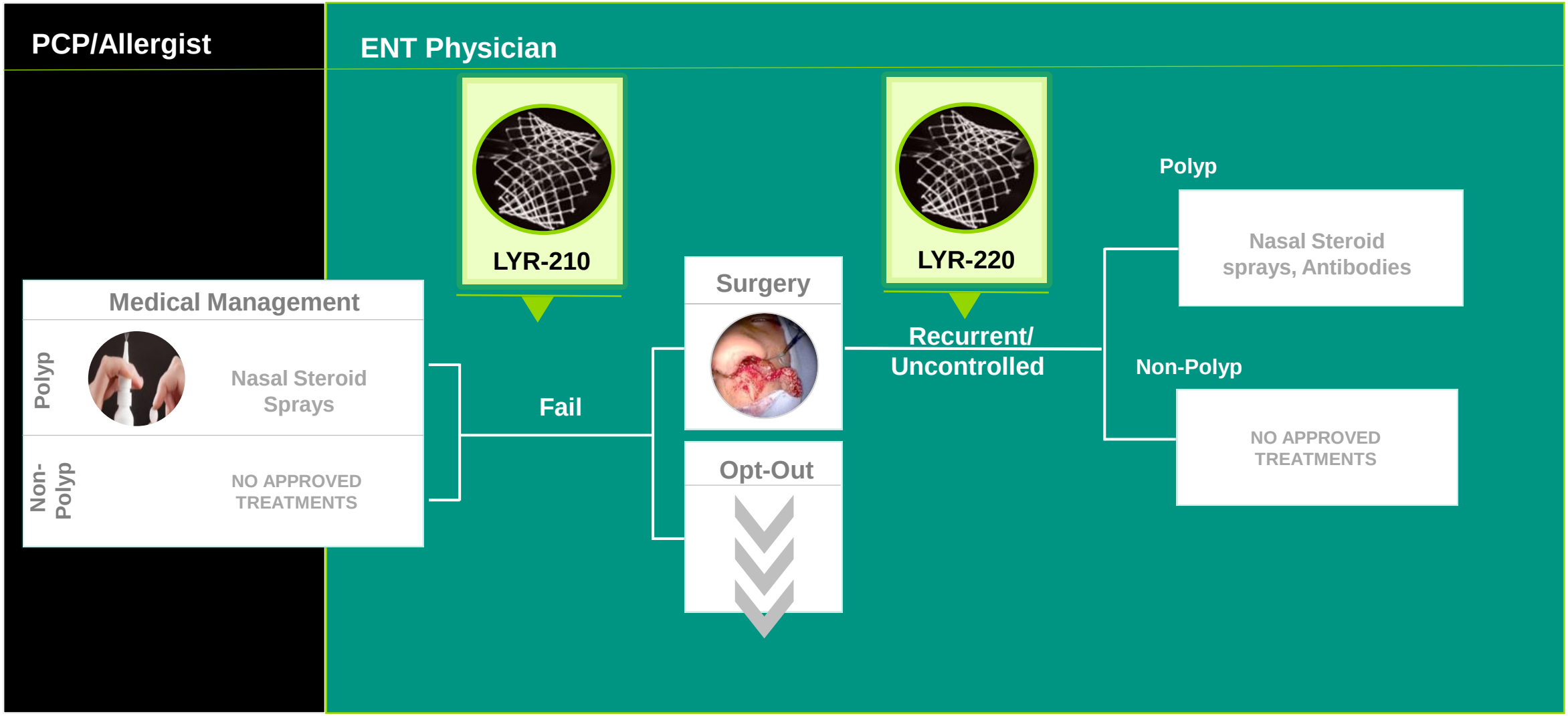
XL

Mometasone Furoate



LYR-210 & LYR-220

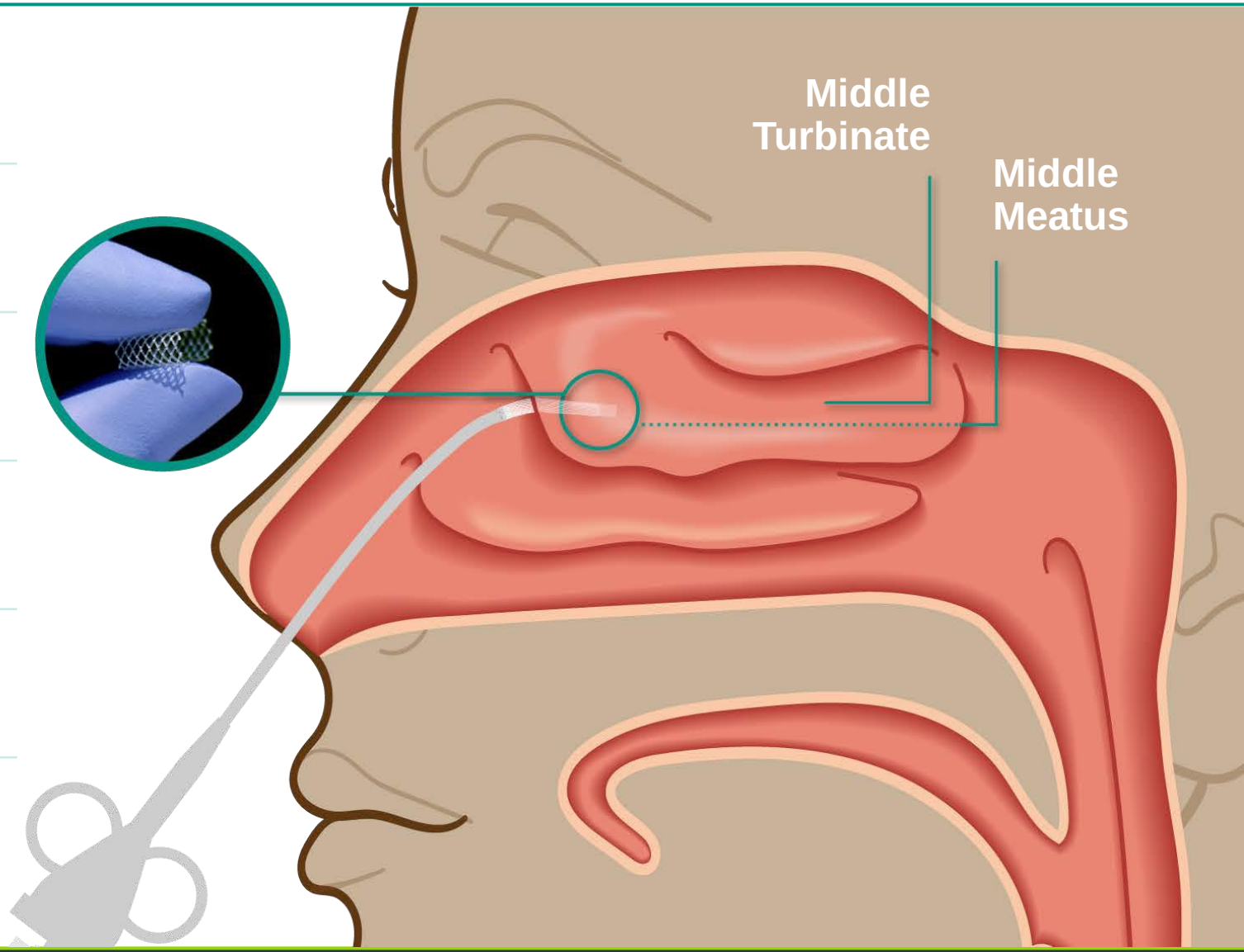
Current Treatment Paradigm



LYR-210

Designed to Provide 6 Months of CRS Therapy from a Single Administration

- FDA-approved API/steroid: Mometasone furoate
- Anti-inflammatory treatment for 6 months as an alternative to surgery
- Administered nasally via a single-use applicator
- Office-based procedure with topical anesthesia
- Not detectable by patients
- Replaced every 6 months



LYR-210 PHASE 1 STUDY

Study Design	Prospective, multi-center, non-randomized, single-arm, open-label clinical trial
Study Objectives	Safety and feasibility over 24 weeks of continuous anti-inflammatory treatment with a single administration of LYR-210 with an additional measurement taken one-week post-removal
Patient Population	Adult CRS patients who have failed medical management and have not had surgery
Number of Subjects	20 patients with CRS (40 LYR-210 matrices placed)
Number of Sites	5 study sites (New Zealand and Australia)
Dose	2,500 mcg bilaterally
Primary Endpoint	Product-related serious adverse events from baseline to 4 weeks post-procedure
Additional Data Collected	• Morning serum cortisol • Intraocular pressure • Plasma PK • Quality of life by SNOT-22 • Endoscopy and MRI

Data Presented at The American Rhinologic Society Annual Meeting 10/18

LYR-210

PHASE 1

Well-tolerated throughout the 24-week treatment period

PRIMARY SAFETY ENDPOINT ACHIEVED

No product-related SAEs

Systemic drug levels either unquantifiable or at the lower limit of quantification

No impact on morning serum cortisol or intraocular pressure

No reported local nasal AEs including:

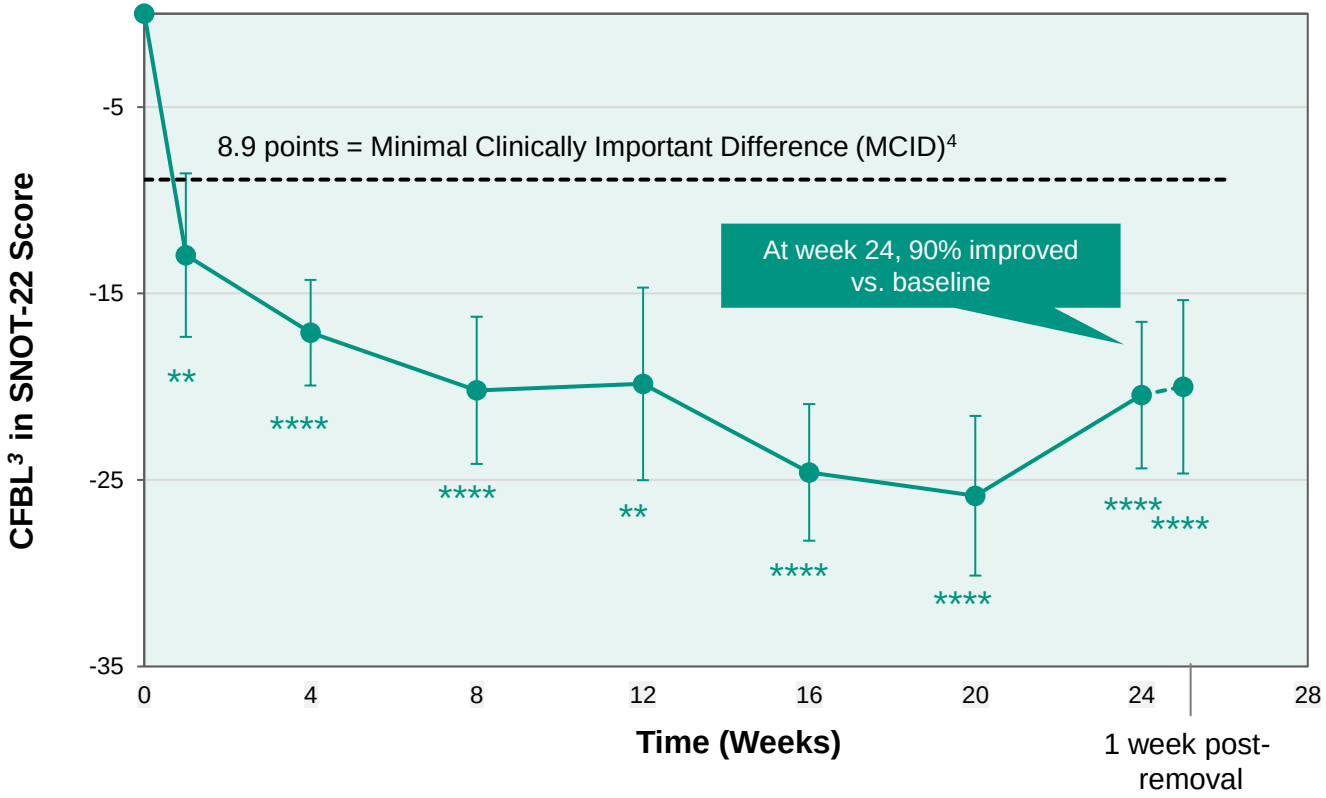
- Epistaxis
- Nasal burning
- Dryness
- Irritation
- Septal perforation

LYR-210

PHASE 1

Rapid and durable improvements in patient symptom severity

Total Symptom Improvement by Validated SNOT-22[1,2]



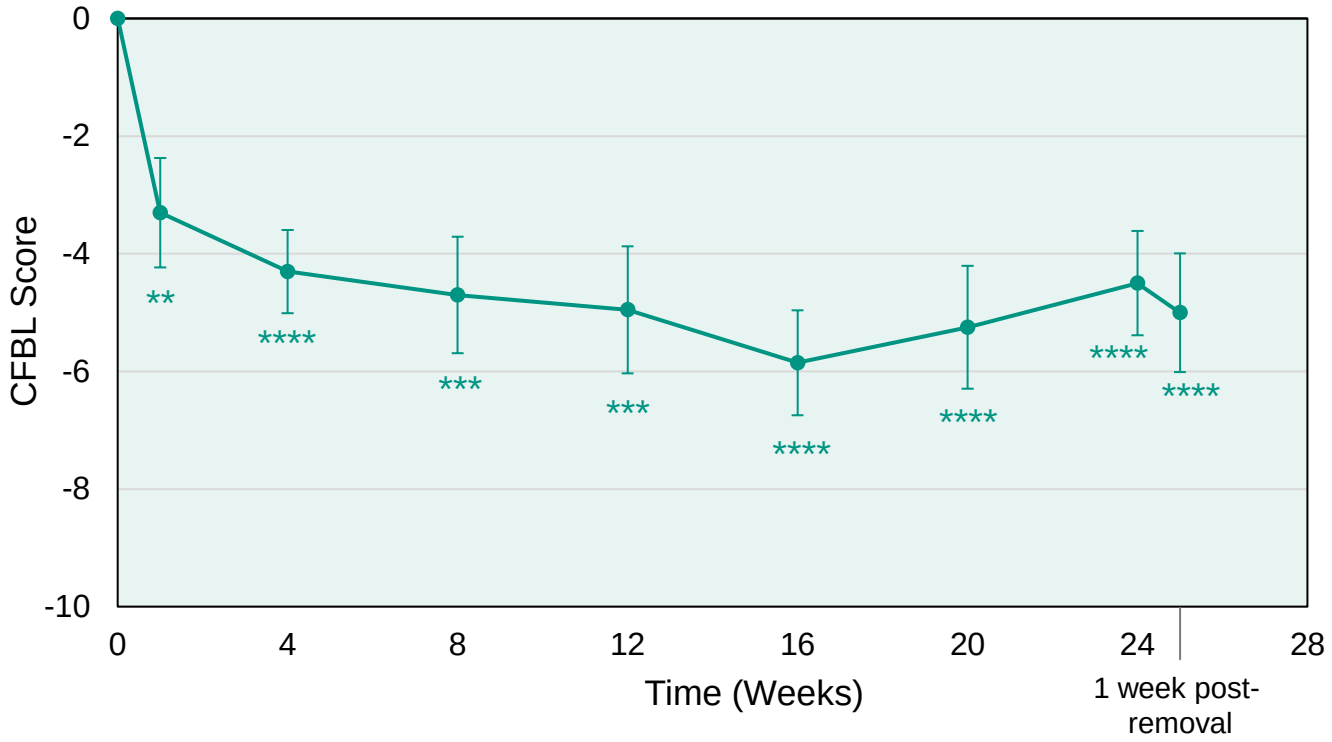
1) SinoNasal Outcome Test; 2) SNOT22 is a patient reported score based on symptoms; 3) Change from Baseline; 4) Clin Otolaryngol. 2009 Oct;34(5):447-54
* P<0.05, **P<0.01, *** P<0.001, **** P<0.0001 to baseline by paired two tailed t-test

LYR-210

PHASE 1

Rapid and durable improvements in the four cardinal symptoms of CRS

Total Symptom Improvement by the 4 Cardinal Symptoms[1]



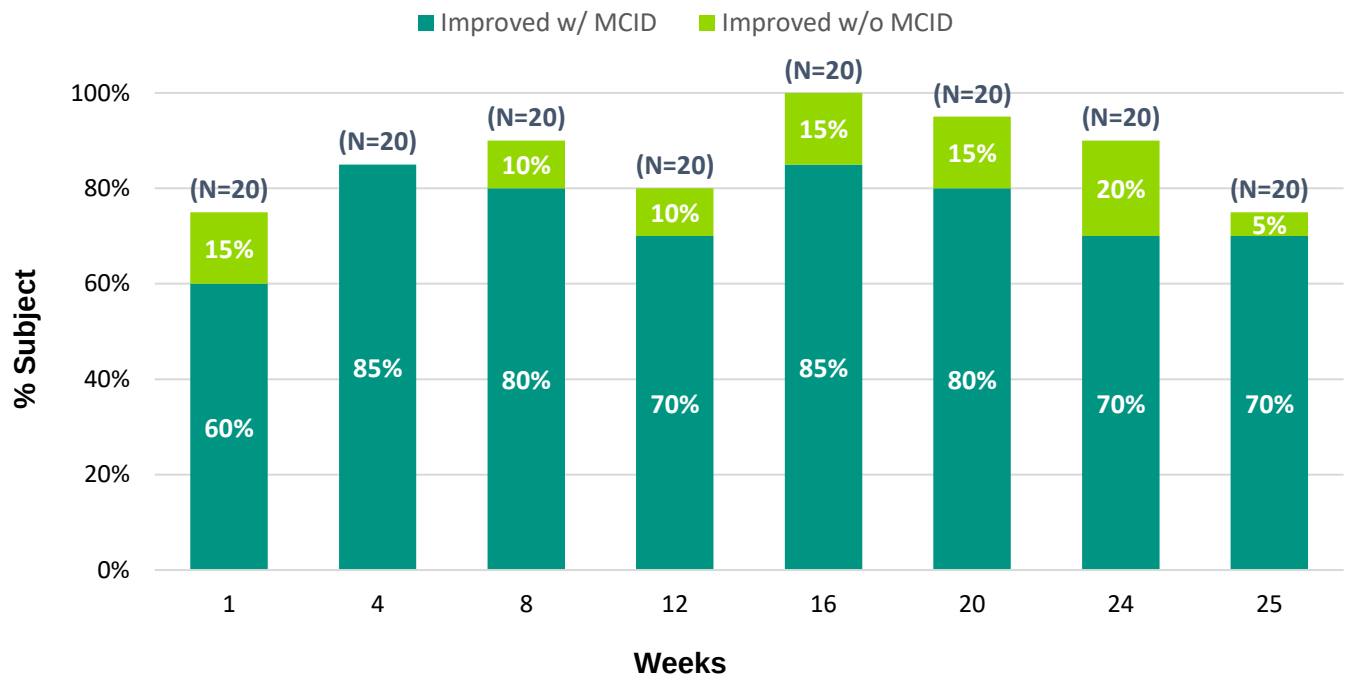
1) 4 cardinal CS symptoms measured in SNOT-22: nasal blockage, facial pain/pressure, posterior nasal discharge, decreased sense of smell. Each symptom is assessed on a 0-5 scale
**P<0.01, *** P<0.001, **** P<0.0001 to baseline by paired two tailed t-test

LYR-210

PHASE 1

The majority of patients experienced clinically meaningful improvement through week 25

Percent of Patients with Symptom Improvement by SNOT-22 Score[1]



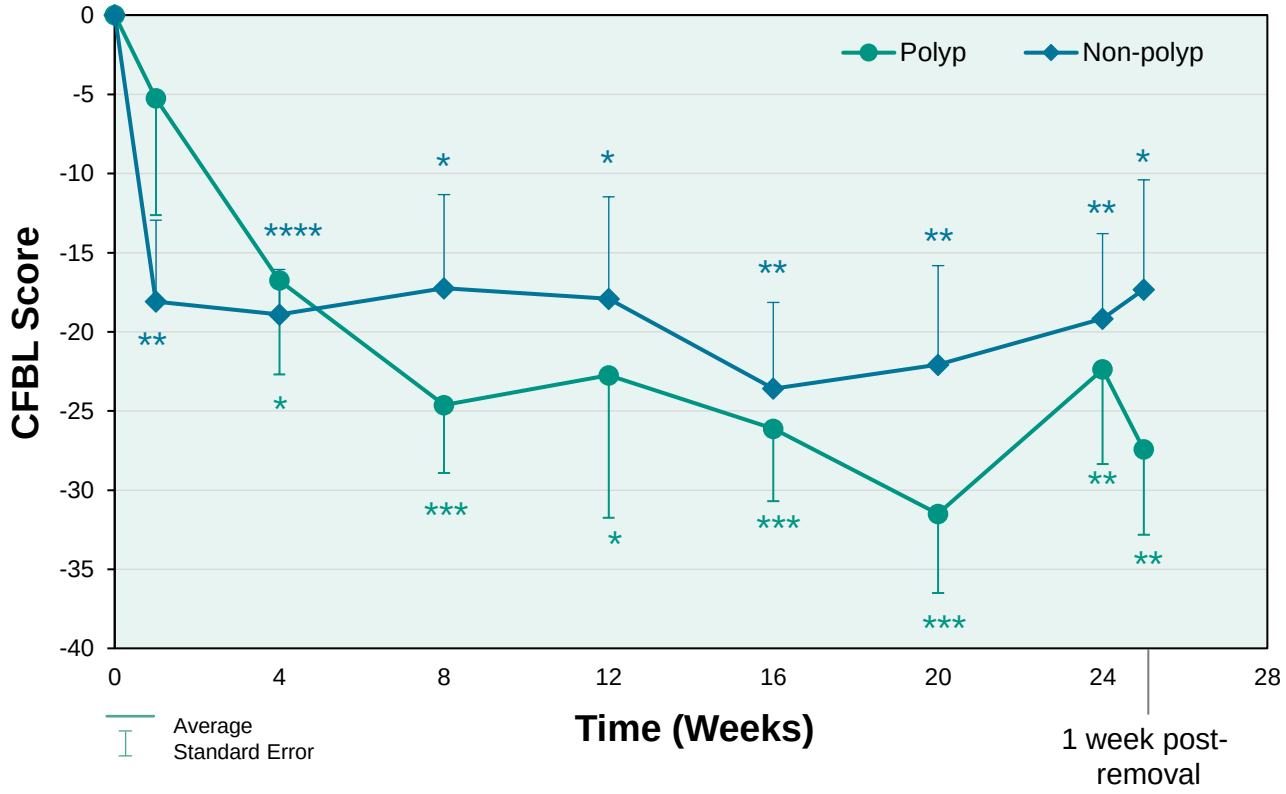
1) Intention-to-treat analysis. MCID defined in Hopkins, Clin Otolaryngol. 2009 Oct;34(5):447-54

LYR-210

PHASE 1

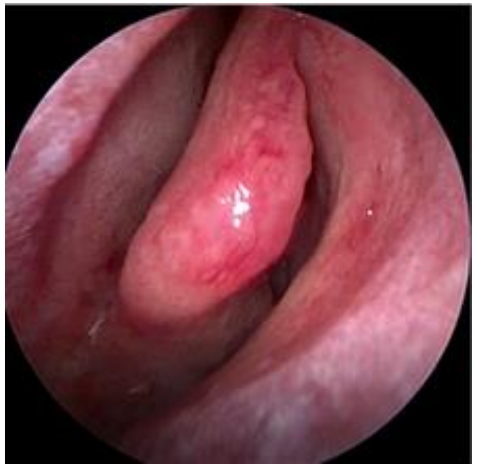
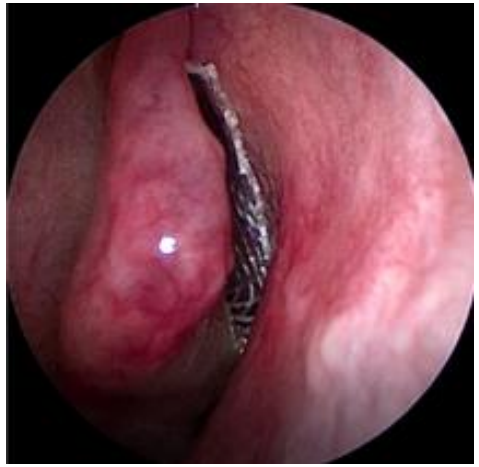
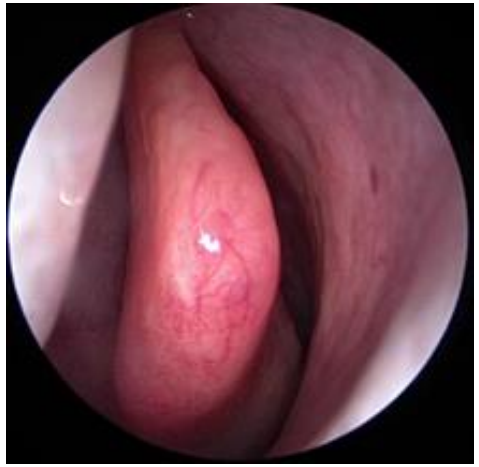
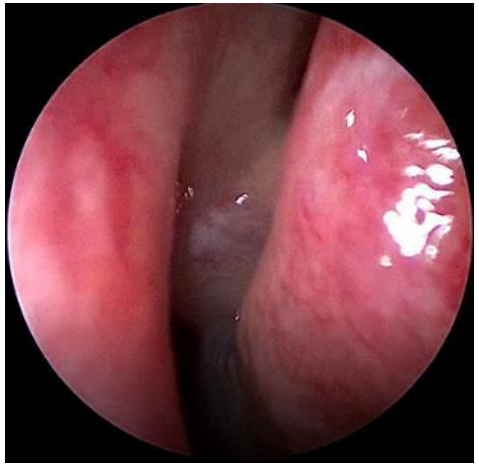
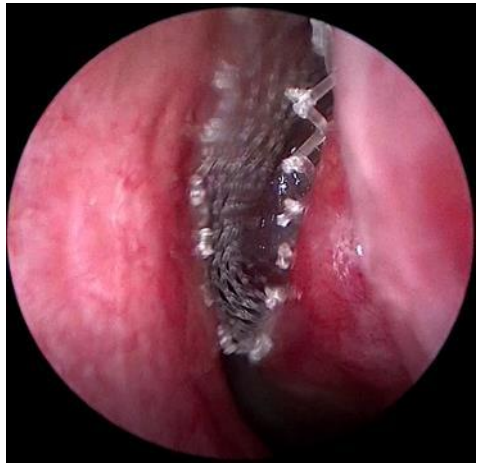
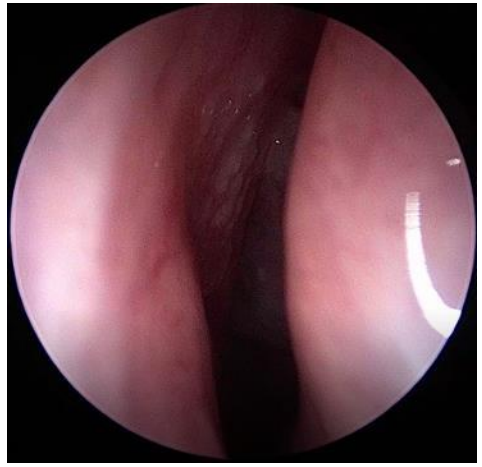
Similar efficacy observed in polyp and non-polyp patients

Symptom Improvement in Polyp and Non-Polyp Patients by Change from Baseline in SNOT-22 Score in Phase 1 Clinical Trial for LYR-210



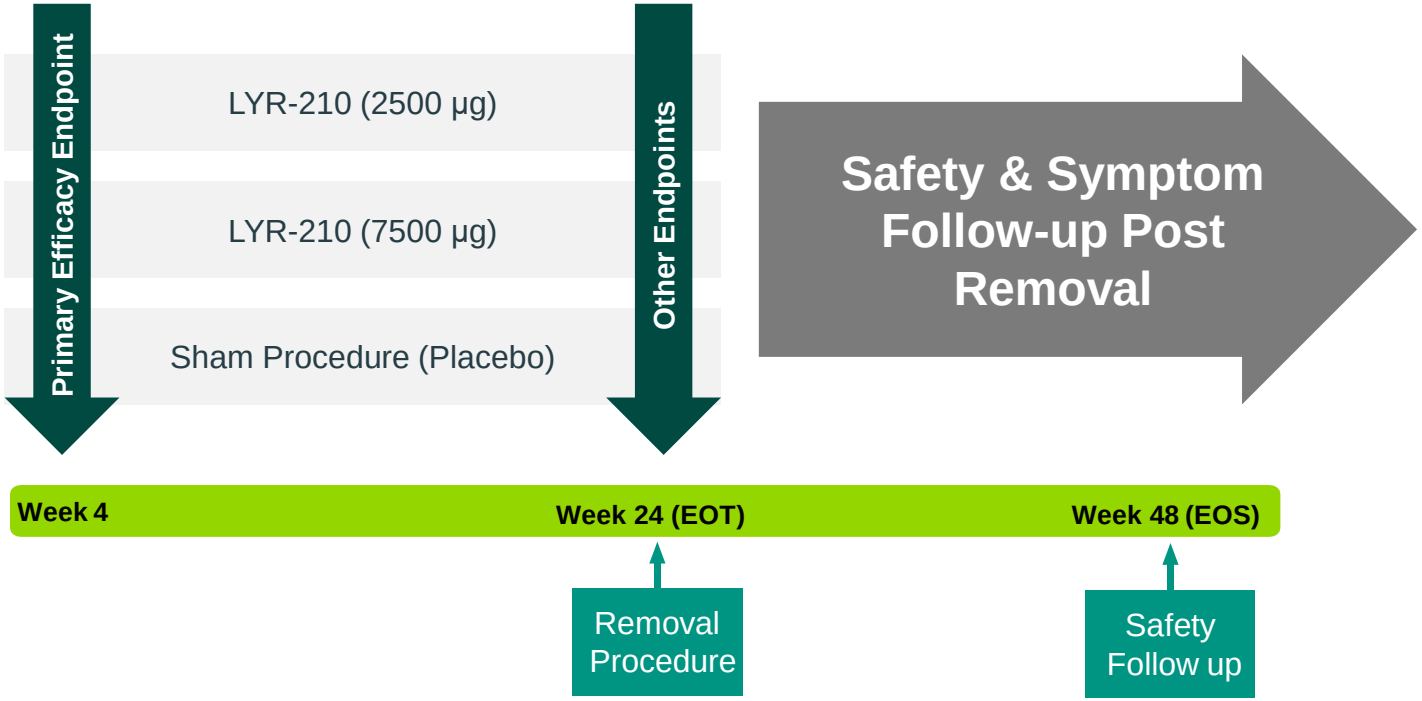
* P<0.05, **P<0.01, *** P<0.001, **** P<0.0001 to baseline by paired two tailed t-test

PHASE 1
Visual Evidence of Inflammation Reduction

	BEFORE LYR-210 Placement	AFTER LYR-210 Placement	1 WEEK AFTER REMOVAL WEEK 25
NON-POLYP PATIENT			
POLYP PATIENT			

THE LANTERN PHASE 2 STUDY DESIGN

Designed to evaluate efficacy in adult subjects with CRS who have failed previous medical management and have not undergone endoscopic sinus surgery

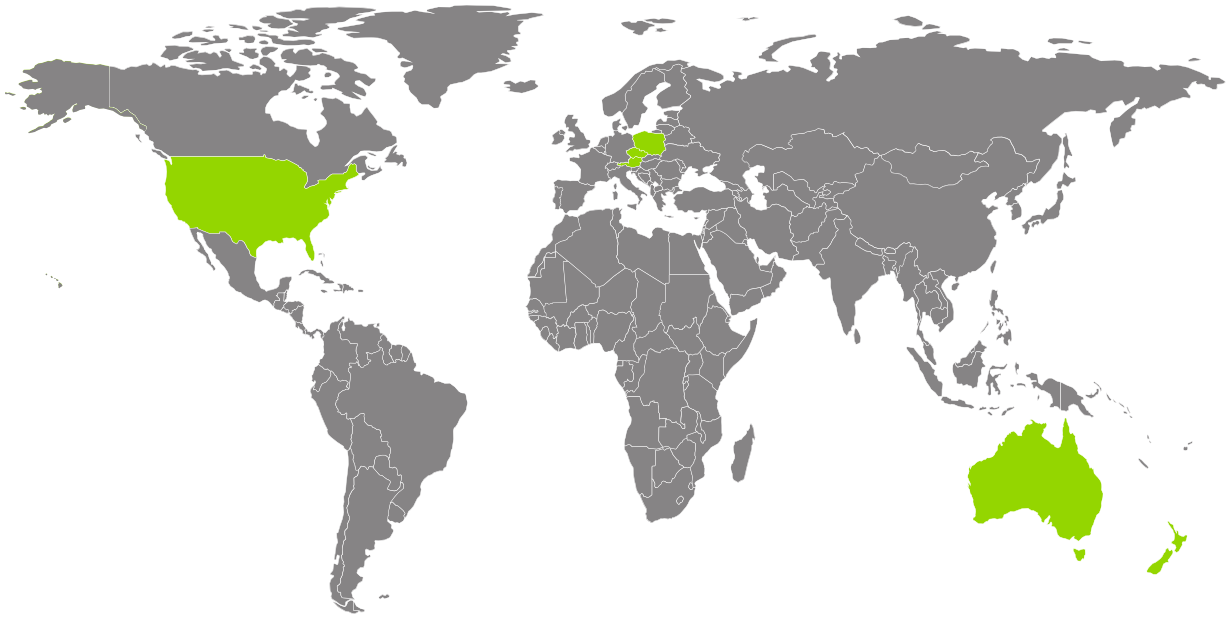


EOT = End of Treatment, EOS = End of Study

Randomized, Blinded, Sham-controlled, Dose-ranging

- 1:1:1 randomization
- Primary endpoint: change in 4 cardinal symptoms at week 4
- Secondary endpoints:
  - Symptom improvement over 48 weeks
  - SNOT-22
  - Time to treatment failure
  - Reduction in inflammation
  - Frequency of exacerbations
  - PK/PD
- Database lock at week 28

THE LANTERN PHASE 2 STUDY STATUS



Global study with sites in Poland, Czech Republic, New Zealand, Australia and Austria

U.S. IND cleared by FDA in December 2019

Phase 2 Status

Enrollment completed at 67 patients

Leveraging remote electronic data collection to enable completion of clinical assessments

Data will inform Ph 3 design

LYR-210 Expected Milestones

Phase 2 top-line data

6-mo safety follow-up

Phase 3 protocol submission to FDA

LYR-210/220

Expected Value Delivered Across Stakeholders

Superior Patient Experience

- Up to 6-months of treatment with a single administration
- New treatment alternative to surgery

Enhanced Physician Experience

- Repeatable in-office procedure
- Fits within existing practice
- Low physician “work”
- Broadens referral base

Value for Payers

- Strong rationale for pharmacoeconomic benefit
- Attractive option relative to biologics and surgery

LYR-210/220

Expected to fit well into ENT Reimbursement Models

Professional Fee

In-office procedure

Done in conjunction with a nasal endoscopy

Can leverage existing CPT codes
for placement and removal

Product Fee

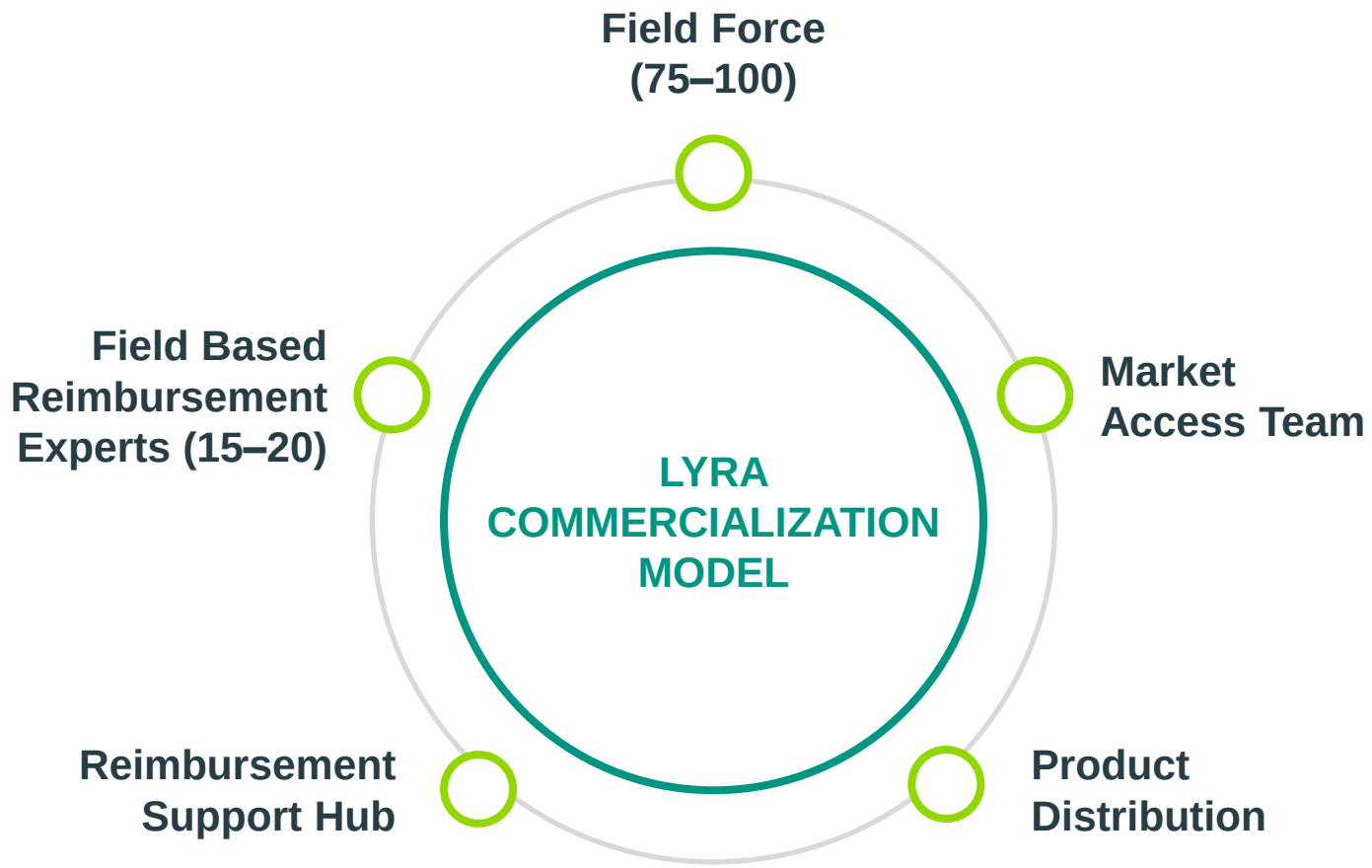
Reimbursed via a J-Code

Purchased through buy-and-bill or specialty pharmacy

Can receive a 5%–10% mark-up per unit

Commercialization Strategy

- Promote product awareness among ENTs and patients
- Secure broad payer coverage
- Ensure reimbursement confidence and facilitate processing of claims
- Limit product acquisition “hassle-factor”



LYRA – UNLOCKING THE ENT MARKET

Innovative Drug Delivery Platform for Continuous Multi-month Release

Differentiated Product Candidate Addressing Large Opportunity

Up to 6 months therapy with 1 administration

~14M Chronic Rhinosinusitis (CRS) patients

No FDA approved medicines for most CRS patients

Compelling Clinical Results

Rapid, clinically meaningful and durable improvement in symptom score observed in Phase 1

90% of CRS patients had improved symptoms at 24 weeks

Phase 2 trial underway in Europe, Australia, New Zealand

Expected Benefit to All Constituents

Effective, long lasting treatment for patients

Straightforward therapy that conforms to ENT practice and provides procedure growth

Strong pharmacoeconomic rationale for payers

Expansion Opportunities

Chronic diseases treatable with ENT delivery

Improve therapeutic properties of known APIs

Prolonged, local delivery for unmet needs


LYRA
THERAPEUTICS