LYRA THERAPEUTICS

Creating precisely tuned medicines so patients can breathe freely

LANTERN PHASE 2 STUDY

TOPLINE RESULTS

DECEMBER 7, 2020

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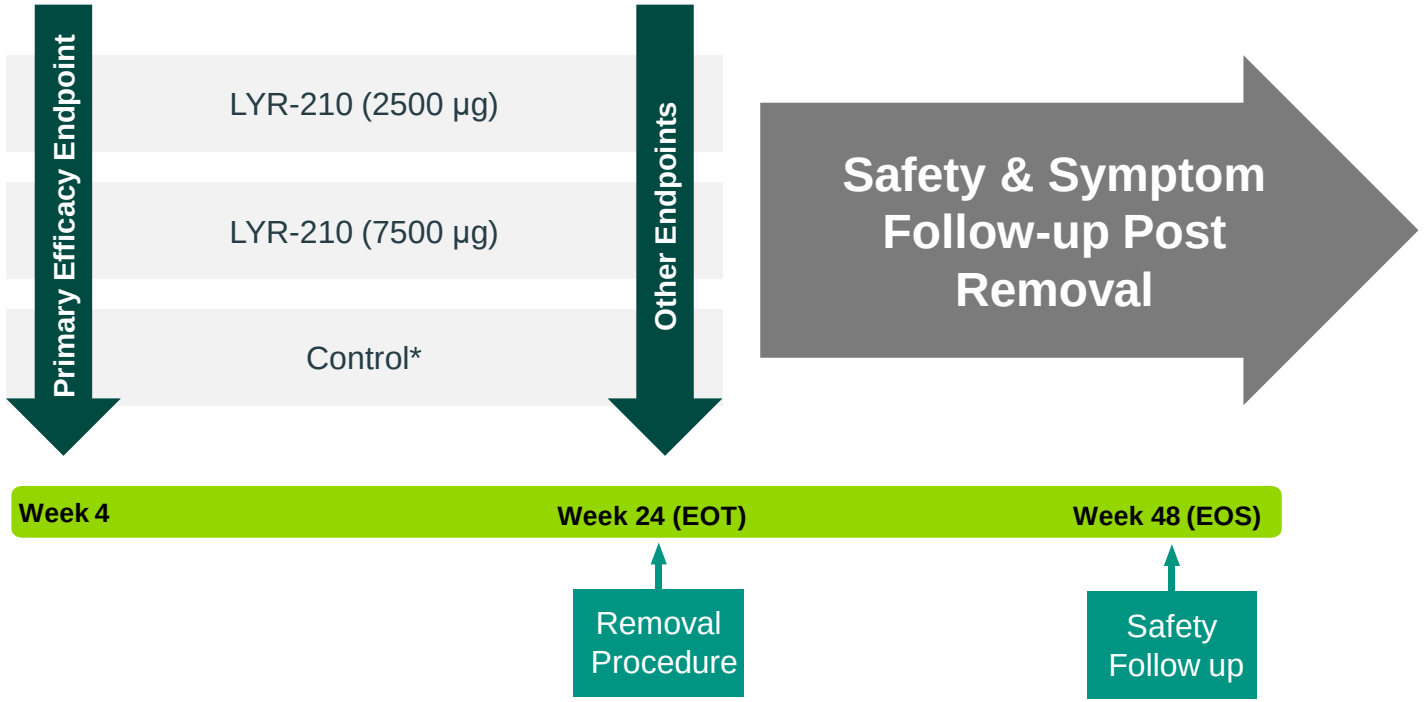
LANTERN PHASE 2 STUDY DESIGN

Objectives: Select dose & collect data to design pivotal Phase 3 program



Designed to evaluate efficacy in adult subjects with CRS who have failed medical management as an alternative to surgery

EOT = End of Treatment, EOS = End of Study
*Control = Sham procedure followed by daily saline irrigation

Randomized, Blinded, Sham-controlled, Dose-ranging

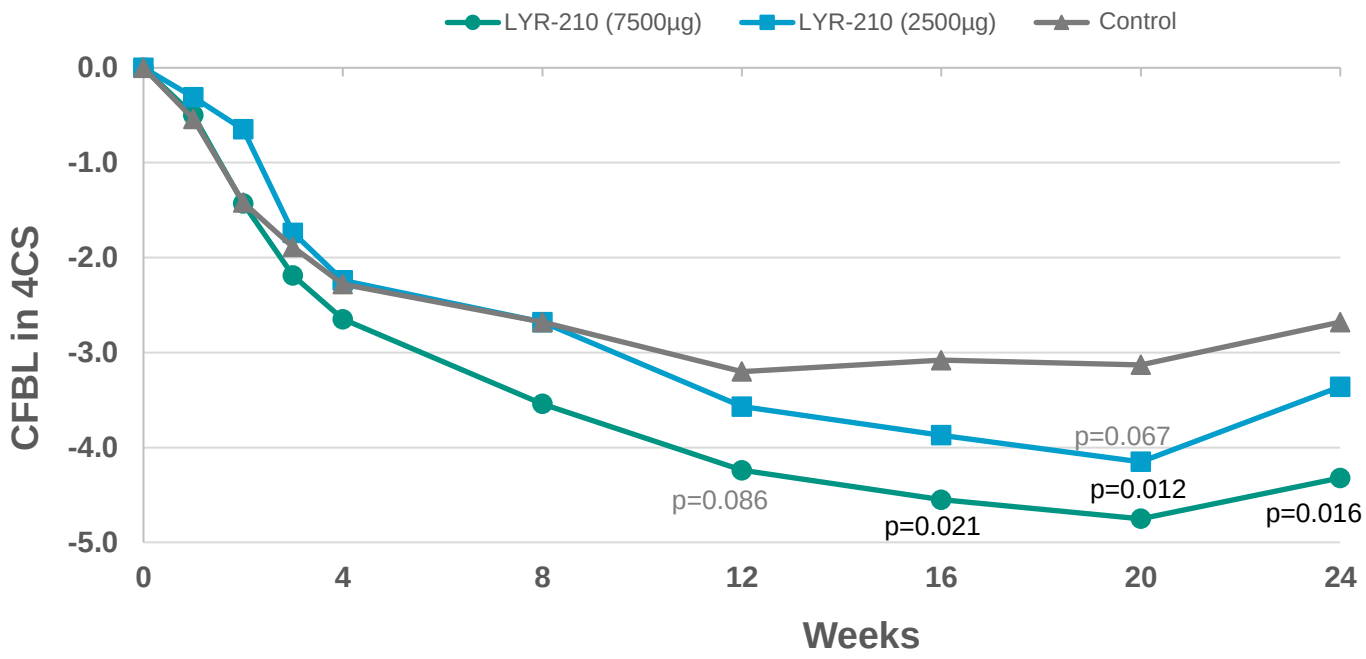
- Enrollment curtailed at 67 due to COVID-19, 150 maximum originally planned
- Both polyp and non-polyp patients
- 16 Sites in Europe, Australia & New Zealand
- Primary endpoint: change in 4 cardinal symptoms (4CS)
- Key secondary endpoints:
  - Cardinal symptoms over 48 weeks
  - SinoNasal Outcome Test (SNOT-22)
  - Time to treatment failure
  - Reduction in inflammation
  - PK/PD

LYR-210

LANTERN PHASE 2 STUDY

- Positive and statistically significant improvement for 7500 mcg at weeks 16, 20, 24
- Validates 6-month benefit from a single administration
- Showed benefit in both polyp and non-polyp patients

TOTAL SYMPTOM IMPROVEMENT BY 4CS[1,2]



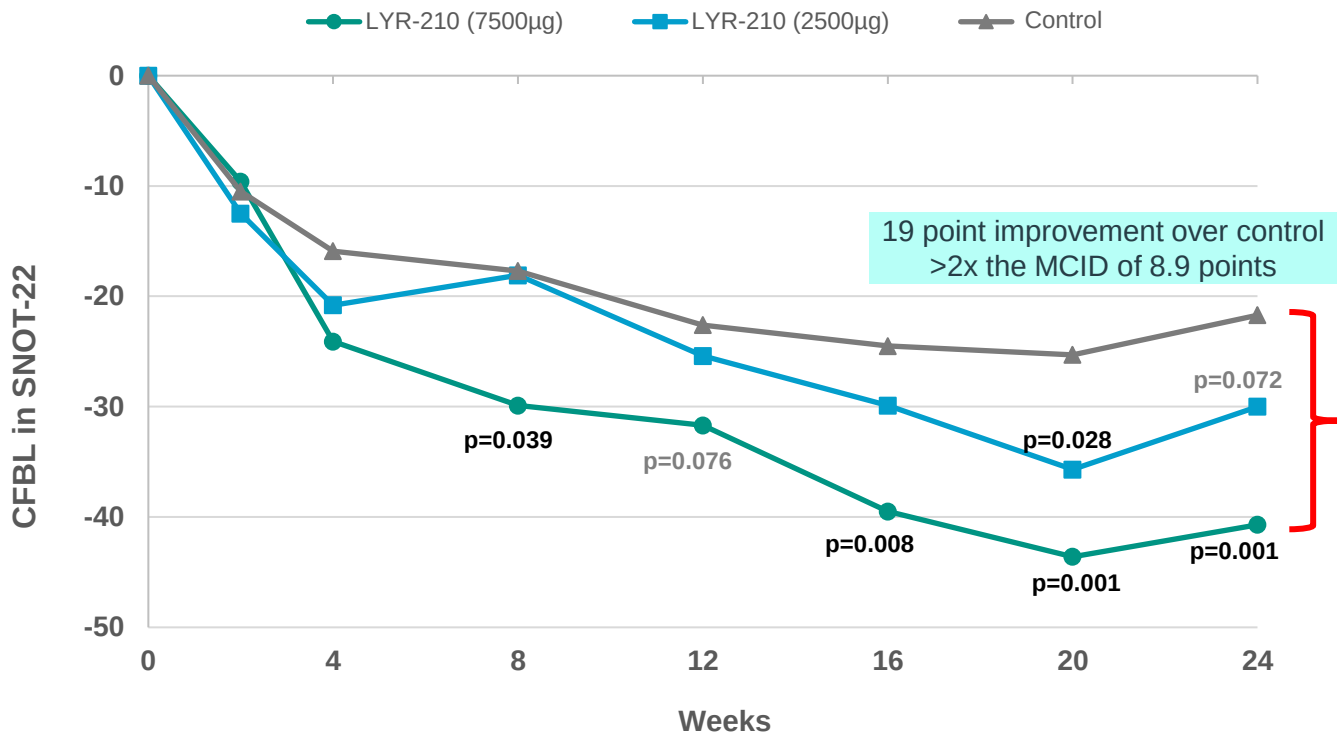
1) 4 cardinal symptom score includes nasal obstruction/congestion, rhinorrhea, facial pain/pressure and anosmia (score of 0-12 based on 7-day average symptom score); 2) Data represents the least square mean. Missing data and data post use of rescue medication was imputed by LOCF method

LYR-210

LANTERN PHASE 2 STUDY

- Higher and earlier statistical significance for 7500 mcg using SNOT-22
- Statistically significant improvement relative to control for 7500 mcg at weeks 8, 16, 20, 24
- 70% of patients in 7500 mcg improved > MCID[3] at week 4; 100% by week 24

TOTAL SYMPTOM IMPROVEMENT BY SNOT-22[1,2]



1) SinoNasal Outcome Test is a patient reported score from 0 – 110 based on symptoms; 2) Data represents the least square mean. Missing data and data post use of rescue medication was imputed by LOCF method; 3) Minimal clinically important difference has been established for the SNOT-22 score at 8.9 points

LYR-210

LANTERN PHASE 2 STUDY

Well-tolerated throughout the 24-week treatment period

WELL-TOLERATED SAFETY PROFILE

No treatment-related SAEs

Treatment-related AE's in more than 1 subject:

- Epistaxis: 3 subjects at 2500 mcg
- Rhinitis: 3 subjects at 7500 mcg
- Rhinorrhea: 2 subjects at 2500 mcg
- Headache: 2 subjects in control

All treatment-related AEs mild or moderate apart from one event:

- Increased viscosity of upper respiratory secretion at 2500 mcg

Treatment-related AE's in control and 7500 mcg groups occurred at comparable rates

LANTERN PHASE 2 STUDY SUMMARY

Positive Phase 2 results position Lyra to move forward to pivotal Phase 3 program

Statistically significant results achieved in the LANTERN Phase 2 study despite curtailed enrollment due to COVID-19

- 7500 mcg achieved statistically significant improvement in **4CS** at **weeks 16, 20 & 24** compared to control
- 7500 mcg achieved statistically significant improvement in **SNOT-22** at **weeks 8, 16, 20 & 24** compared to control
- Both doses were well-tolerated
- LYR-210 is the first treatment to demonstrate six months of benefit via a single administration
- First nasal implant to demonstrate benefit in both polyp and non-polyp patients
- First trial to demonstrate a dose response with a nasal implant
- Data supports moving forward with the 7500 mcg dose
- Data informs pivotal Phase 3 program; End of Phase 2 FDA meeting mid-2021
- Validates XTreo™ platform; move forward with 7500 mcg dose for LYR-220