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Top-Line Data from Phase 2a Clinical Trial in COPD with RPL554 Dosed in Addition to Tiotropium (Spiriva®)

September 7, 2017

RPL554 Observed to Produce Additional Bronchodilation when Combined with tiotropium (Spiriva®) in Moderate to Severe COPD

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Trial Overview

- **Trial Description:** Double blind, randomized, cross-over, Phase 2a trial to assess the improvement in lung function, as measured by FEV_1, of RPL554 or placebo as an add-on treatment to tiotropium
- **Patient Population:** 30 moderate-to-severe COPD patients, males and females, age 40-70
- **Location:** 1 / United Kingdom
- **RPL554 Dosage:** Three days of twice daily dosing with RPL554 1.5 mg, 6 mg, or placebo as an add-on treatment to once daily tiotropium. Last doses in the morning of Day 3

Key Findings on Day 3 of treatment

- RPL554 improved peak FEV_1, as compared to placebo, by a clinically and statistically significant amount
- RPL554 produced an additive and significant reduction in residual lung volumes, functional residual capacity and airway resistance as compared to placebo
- RPL554 on top of tiotropium significantly reduced the median time to onset of bronchodilation compared to tiotropium alone
- RPL554 was well tolerated at both 1.5 mg and 6 mg when dosed as an add-on treatment to tiotropium

RPL554 Provides a Significant Additional Bronchodilator Response when Inhaled on Top of Tiotropium

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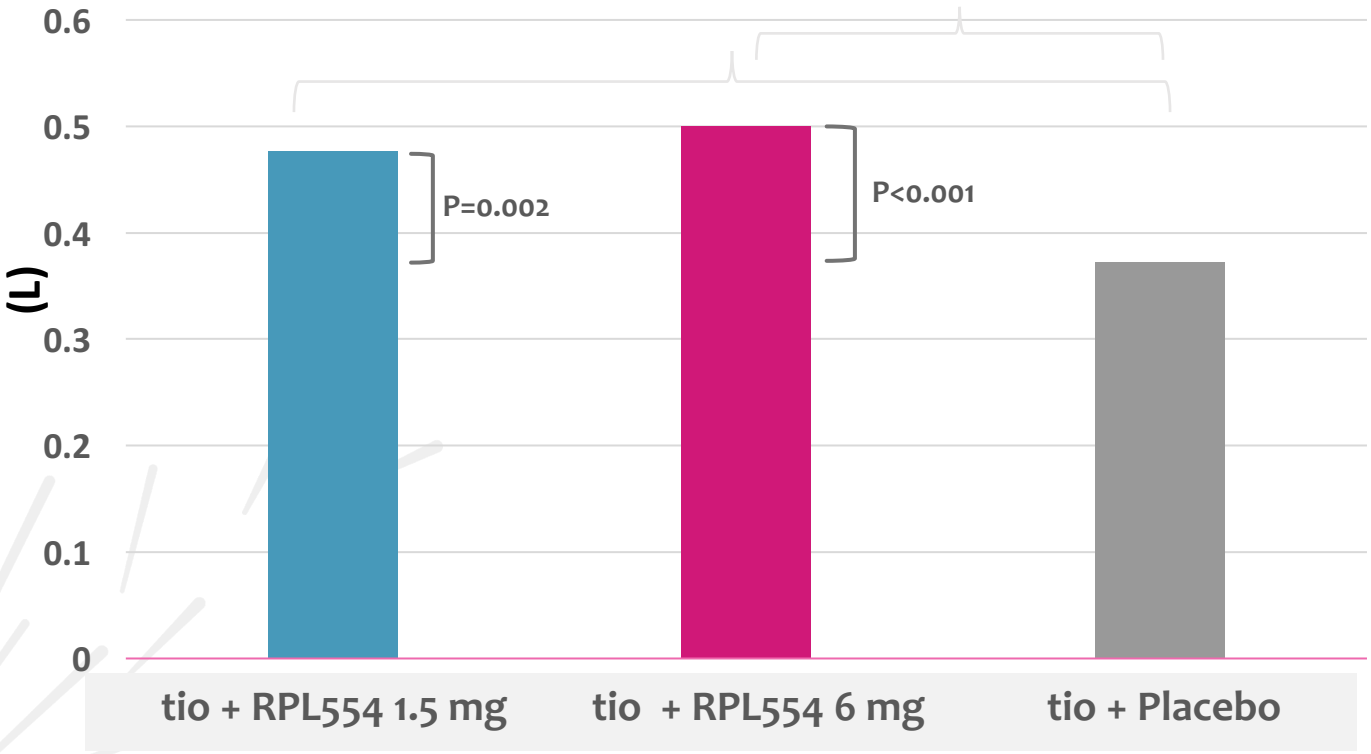
Peak Change from Baseline in FEV_1(L) on Day 3

N=27-28



RPL554 Causes Marked Reduction in Hyperinflation, Residual Volume (RV, air trapping) as Compared to Tiotropium Alone

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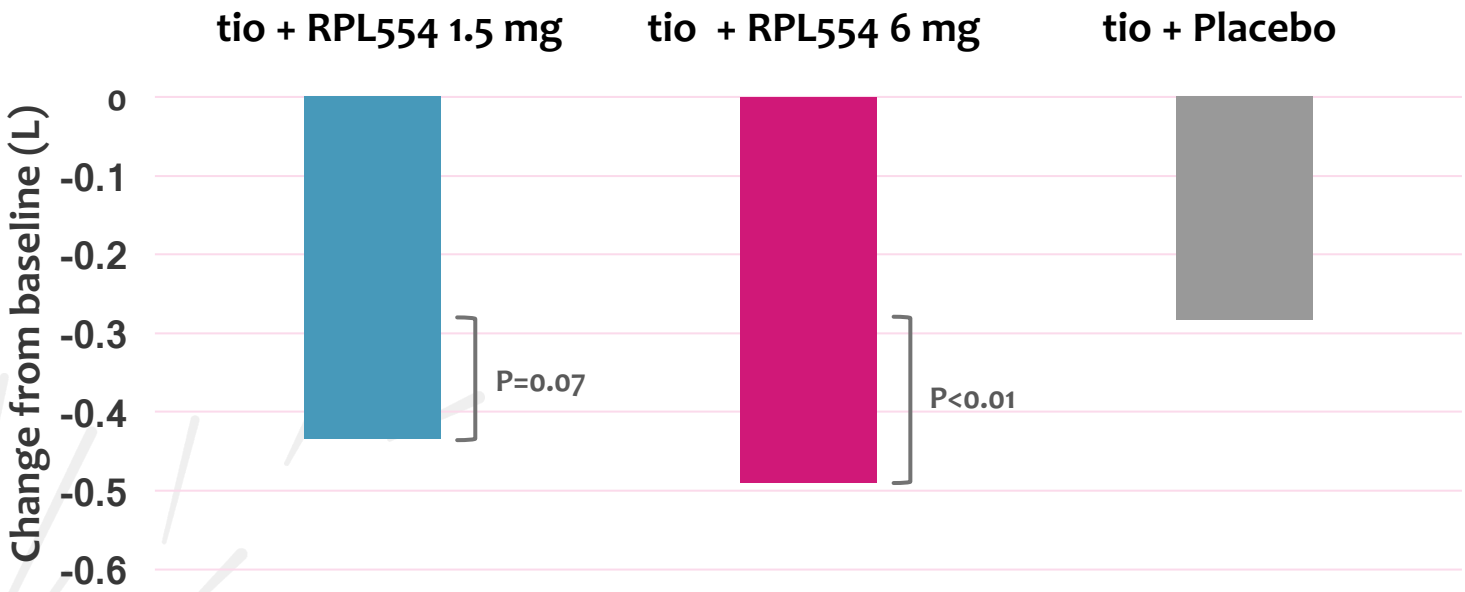
Reduction in Hyperinflation (L) on Day 3

N=27-28



Reduction of hyperinflation is typically correlated with improvement of shortness of breath

RPL554 Combination Increases Speed of Onset of Bronchodilator Effect

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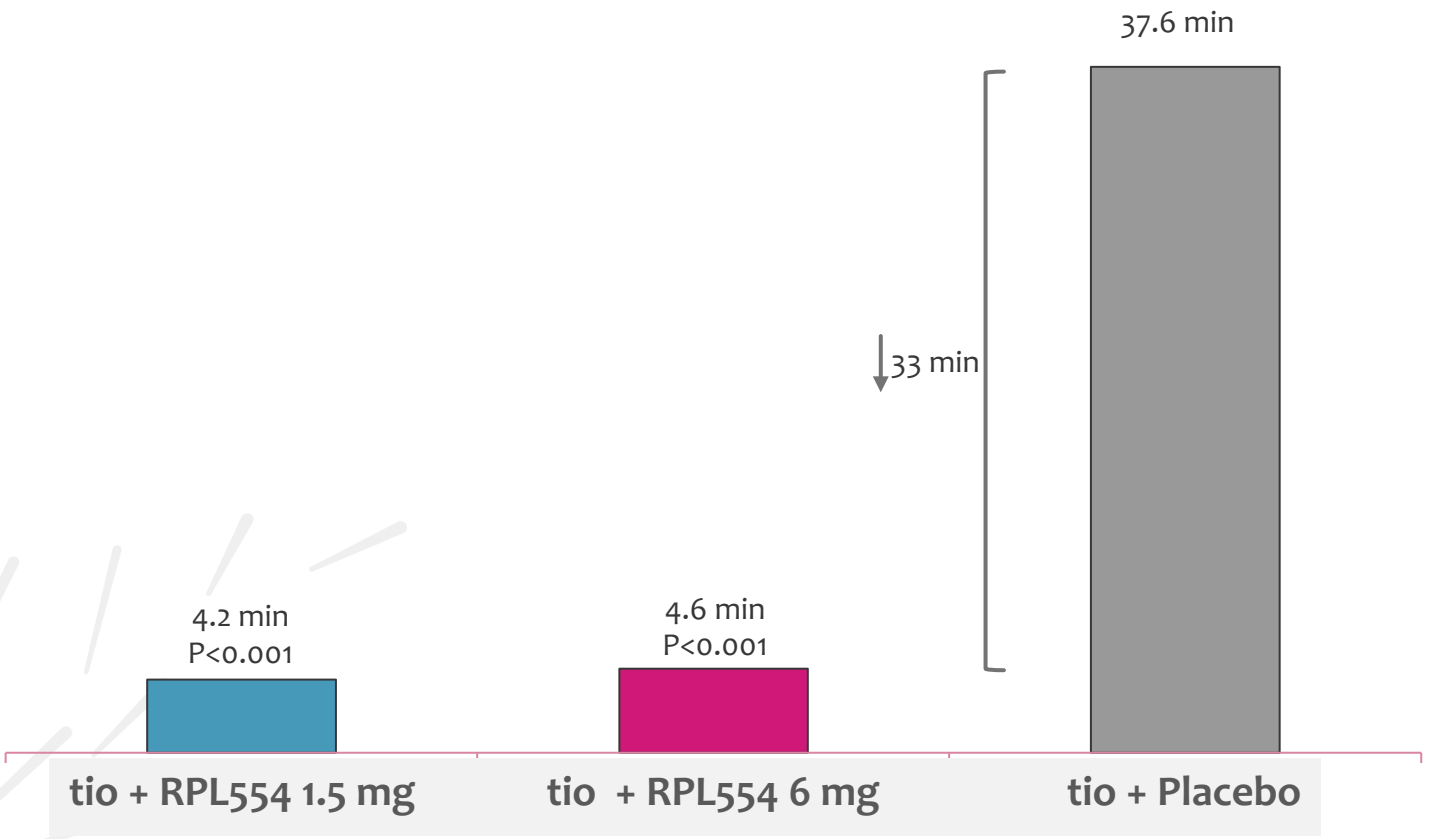
Median Time to Onset (≥10% improvement in FEV_1 ; mins) on Day 3

N=27-28



Reinforces the potential of RPL554 in treating acute exacerbations of COPD