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The COPD Pipeline XXXIX

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Abbreviations: chronic obstructive pulmonary disease, **COPD**; phosphodiesterase, **PDE**; forced expiratory volume in 1 second, **FEV_1**; non-typeable Haemophilus influenza, **NTHi**; Moraxella catarrhalis, **MCat**; long-acting beta2-agonist, **LABA**; long-acting muscarinic antagonist, **LAMA**

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phosphodiesterase; non-typeable Haemophilus influenza; Moraxella catarrhalis; long-acting beta2-agonist; long-acting muscarinic antagonist; umeclidinium; vilanterol

Latest Clinical Trial for RPL554

This agent is one of several that have been explored for anti-inflammatory properties. It was tried first for allergic rhinitis, next in asthma and now in chronic obstructive pulmonary disease (COPD). It is a dual inhibitor of phosphodiesterase (PDE) 3 and 4. While PDE3 inhibitors are known to have bronchodilator actions, PDE4 inhibitors modulate inflammatory airway disorders. The thinking, therefore, is that an agent that combinates both actions might be effective in COPD, possibly with additive clinical effects. The agent is inhaled which could be a clinical advantage over other routes of administration. A recent clinical trial by Verona Pharma Inc., which commenced in mid-2017, was to determine the appropriate dose (NCT 03443414).[1] Specifically, "the purpose of the study was to investigate the dose response of RPL554 in patients with COPD over 4 weeks. This length of time should have allowed for study of the bronchodilator response, measured predominantly by the peak forced expired volume in one second (FEV_1), and the anti-inflammatory response, as measured predominantly by trough FEV_1."[1] Results may be expected shortly.

Burden of Illness

Per Clinical Trials.gov, a new study "aims to assess the burden of illness for COPD using both patient-reported symptom burden and claims-based economic burden."[2] Participants will be treated with single-inhaler-dual therapy treatments, namely fluticasone/salmeterol twice daily or umeclidinium/vilanterol once daily. "The study will use a health plan recruitment strategy and individuals will be recruited using Optum's health plan recruitment strategy to collect information relating to the [individual's] condition history, current treatment, smoking history, symptoms and symptom severity. [A total of] 2700 [individuals] are scheduled to be enrolled in the study to reach the target evaluable sample size, namely 770 [participants]. Pharmacy and medical claims data will be used to calculate all-cause and COPD-related health care utilization and costs, treatment patterns, and baseline clinical characteristics. The study duration is estimated to be 12-months" (NCT03543176).[2]

SAR440340

SAR440340 is a monoclonal anti-interleukin-33 antibody. In a phase 2 study, it's properties will be tested by "proof of concept" in 340 participants. Besides placebo, COPD patients receiving any corticosteroids, beta-agonists or antimuscarinics may be included. Administration is "by the injection route" and the primary outcome will be the rate of moderate to acute severe exacerbations of COPD (NCT03546907).[3]

CK-2127107

CK-2127107 is an agent that has been tried for neuromuscular disorders such as amyotrophic lateral sclerosis, possibly without success. Its present purpose is a study of individuals with COPD and muscular problems. The action and nature of the agent is not stated. Per the Clinical Trials.gov website on the recently completed study, "the phase 2 trial [measured] the effect of CK-2127107 relative to placebo on cycle ergometer exercise tolerance, assessed as change from period baseline in constant work rate endurance time, utilizing a breath-by-breath metabolic measurement system with integrated electrocardiogram. The time to intolerance [was] assessed by a stopwatch and verified from electronic recordings of the cycle ergometer. This study [also assessed] cardiopulmonary and neuromuscular effects of CK-2127107 relative to placebo" (NCT02662582).[4]

CCI 15106

A recently completed study aimed to determine the effect of an agent on both an inhaler and a by-passer individual in the same vicinity. The nature of the agent used is not stated. Increasing doses were administered to "collect information about the safety, tolerability and drug levels in the body of the CCI15106 inhalation powder."[5] The study also looked at the level of the agent that was released into the adjacent air and may be found in the blood of the bystanders. Thus, in a 2-part study, healthy individuals inhaled the above agent and the exposure of healthy bystanders was measured. In a subsequent study the drug was administered to individuals with COPD. Approximately 36 healthy participants and 22 participants with COPD were randomized in the study. Per the Clinical Trial.gov website, "This single and repeat increasing dose study [collected] information on safety, tolerability and drug levels in the individual inhaling the CCI15106 inhalation powder. The study [also looked] at the level of CCI15106 that [was] released into the air and may be found in the blood of the people standing around the person inhaling it" (NCT03235726).[5]

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