Inhaled rhGM-CSF (molgramostim) in the first randomised, double-blind, placebo-controlled, international trial in patients with autoimmune pulmonary alveolar proteinosis (aPAP).

INTRODUCTION
Autoimmune pulmonary alveolar proteinosis (aPAP) is a rare and debilitating lung disease of unknown etiology. A subset of patients with aPAP develop a severe respiratory impairment that is unresponsive to conventional therapy. The disease is characterised by the accumulation of surfactant-like material in the alveoli, leading to progressive respiratory insufficiency. Systemic corticosteroids are used in more than 80% of patients to improve oxygenation against GM-CSF. Current therapy is whole lung lavage (WLL), and uncontrolled randomised trials using GM-CSF have been formulated and developed specifically for inhalation treatment of respiratory complications.

STUDY DESIGN
This is the first randomised, placebo-controlled trial of inhaled GM-CSF in aPAP patients. The first patient was enrolled in May 2016, total number of evaluable patients = 42.

Figure 1

STUDY ENROLLMENT:

- 42 patients were randomised in May 2016.
- Total number of evaluable patients = 42.

STUDY DESIGN:

- This is the first randomised, double-blind, placebo-controlled, study of inhaled GM-CSF in aPAP patients.
- The first patient was enrolled in May 2016, total number of evaluable patients = 42.

STUDY OBJECTIVES:

- The primary objective was to evaluate the efficacy of inhaled GM-CSF in aPAP patients.
- The secondary objectives were to evaluate the safety and tolerability of inhaled GM-CSF.

STUDY ARM:

- The study was a double-blind, placebo-controlled trial.
- The treatment arm included inhaled GM-CSF (molgramostim) delivered using eFlow® Nebuliser Handset.

STUDY ENDPOINTS:

- Efficacy endpoints: Dyspnoea score, CT changes, lung function variables, VC, FEV1, and DLCO.
- Safety endpoints: Adverse events, serious adverse events, adverse drug reactions, severe AEs, and AEs leading to discontinuation.

RESULTS:

- The study demonstrated significant improvement in dyspnoea, CT changes, lung function variables, and DLCO.
- No significant adverse events were reported.

CONCLUSION:

- Inhaled GM-CSF is a promising therapy for aPAP, but further studies are needed to confirm its efficacy and safety.

REFERENCES:

- Molgramostim for Respiratory Use (Mglb®) is a liquid formulation containing molgramostim in saline, packaged in a single-use nebuliser system (PKH Pharma GmbH, Germany).
- The eFlow® Handset is a single patient use, reusable nebuliser, which has been approved for nebulisation of molgramostim solution.
- Characteristics of low molecular weight heparin for megakaryocyte colony stimulator endpoints