Abstract Group: 5.1. Airway Pharmacology and Treatment
Keyword 1: Anti-inflammatory Keyword 2: Imaging Keyword 3: Pharmacology

Title: Effects of high dose N-acetylcysteine in COPD patients

Prof. Dr Wilfried 6587 De Backer wilfried.debacker@ua.ac.be MD ², Mr. Cedric 6578 Van Holsbeke cedric.vanholsbeke@fluidda.com ¹, Dr. Anna 6580 Sadowska anna.sadowska@uza.be MD ², Dr. Jan 6579 De Backer jan.debacker@fluidda.com ¹, Mrs. Rita 6581 Claes rita.claes@uza.be ² and Mr. Wim 6577 Vos wim.vos@fluidda.com ¹. ¹ Respiratory, FluidDA nv, Kontich, Belgium and ² Respiratory Medicine, University Hospital Antwerp, Edegem, Belgium.

Body: Aim Studies suggest that NAC can reduce inflammation and hyperinflation in COPD patients, but little data is published about effects of high dose NAC (3x600mg daily) on airway remodeling. Since hdNAC may induce high levels of GSH, this study focuses on the effect of hdNAC on airway structure/function in relation to GSH. Method A double blind randomized placebo-controlled 2way crossover pilot study in 12 GOLDII patients was performed. Patients were treated twice for 3m with either hdNAC or placebo (provided by Zambon S.p.A.) on top of their usual medication according to GOLD guidelines. Respiratory functional imaging (RFI) was used to assess airway volume (iVaw) and resistance (iRaw) (De Backer et al. Radiol. 2010;257(3):854-862). Data was collected at baseline and after both treatment periods. Result A clear drop in iRaw is seen in patients with a higher anti-oxidant reserve (i.e. low baseline GPx) despite lack of overall improvement in the entire population. This drop in iRaw is observed in patients that were already treated according to GOLD criteria.

Conclusion For the first time reduction in iRaw caused by anti-oxidant mucolytic drug is shown using highly sensitive RFI methods. It would be interesting to study in a larger population whether this indicates recovery of the β-receptor sensitivity subject to oxidative impairment. The results demonstrate the potential of using RFI to assess anti-inflammatory characteristics of existing and newly developed compounds.