The effect of *Hi*gh dose N-*Ace*tylcysteine (600mg twice daily) in patients with stable COPD - a 1-year, double blind, RCT

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- Background:
  - The mucolytic and antioxidant effects of NAC may be of great value in the treatment of COPD patients
  - However, previous studies have not clearly demonstrated the beneficial effects of NAC in COPD patients, possibly because
    - the NAC **doses were too low** and/or
    - **inadequate outcome parameters** were measured (e.g. FEV1)
- Objectives:
  - To investigate the effects **of 'high-dose NAC' (600mg b.d)** in addition to usual therapy in stable COPD patients

METHODS:

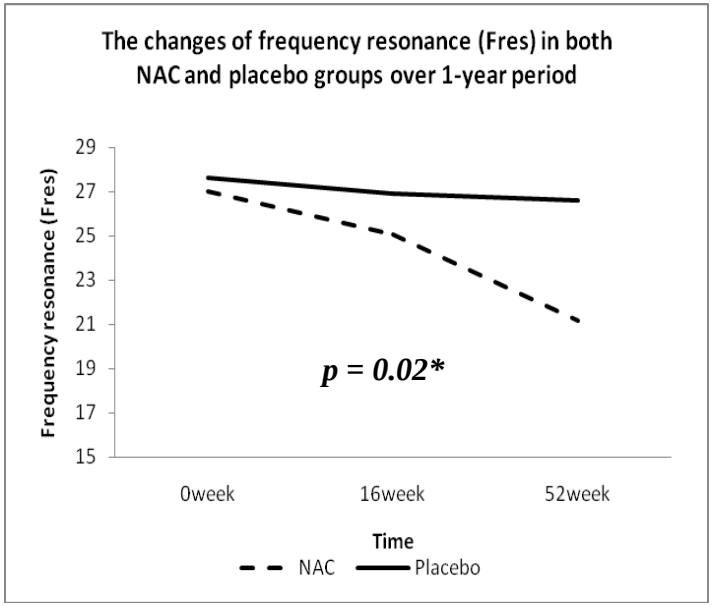
- 1- year, double-blind, RCT in KWH
- **Inclusion criteria:**
  - aged 50-80 years old with spirometry confirmed COPD
- Randomized to 'high dose' NAC 600mg twice daily or placebo treatment, followed up at 16-week period
- **Primary outcome:**
  - Lung function parameters for small airway function (spirometry and forced oscillation technique (FOT))
- **Secondary outcome:**
  - Exacerbation and hospitalization rate, SGRQ

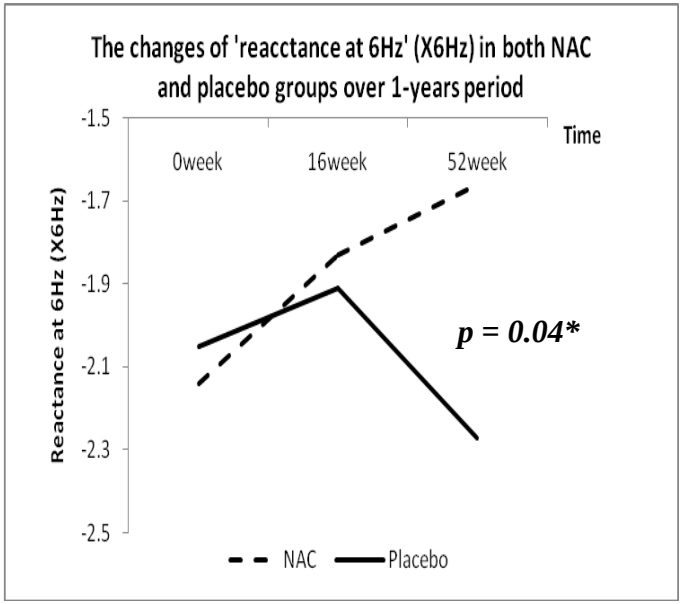
BASELINE CHARACTERERISTICS:

- N=120 recruited after run-in period (58 in NAC group, 62 in placcebo)
- Male (93%), mean age (71), moderate to severe (FEV1: 53%)
- **no significant difference between the 2 groups at baseline**

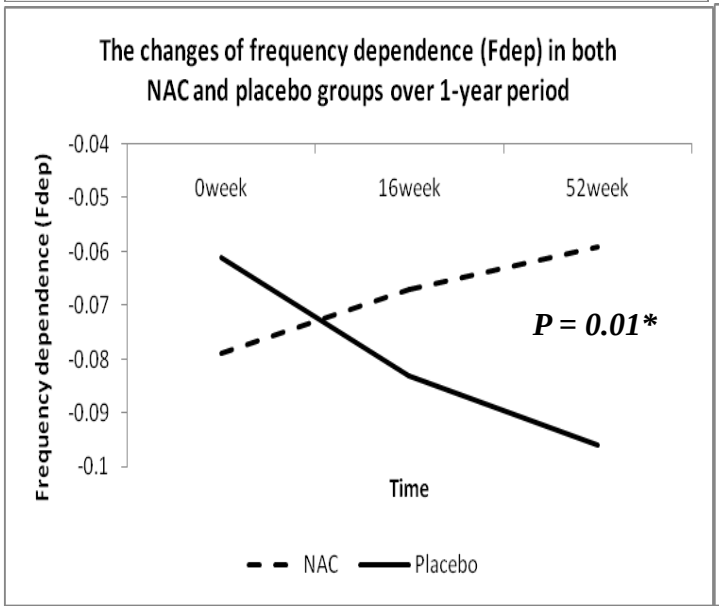
Forced oscillation technique (FOT)

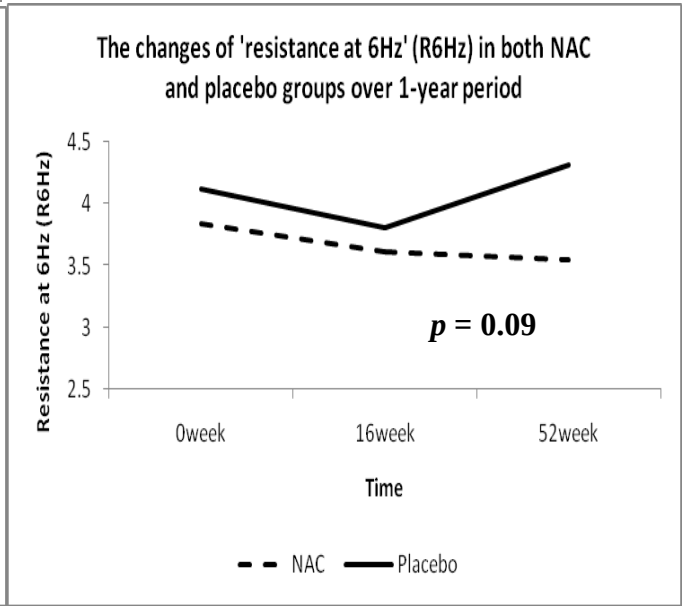
Reactance (R)



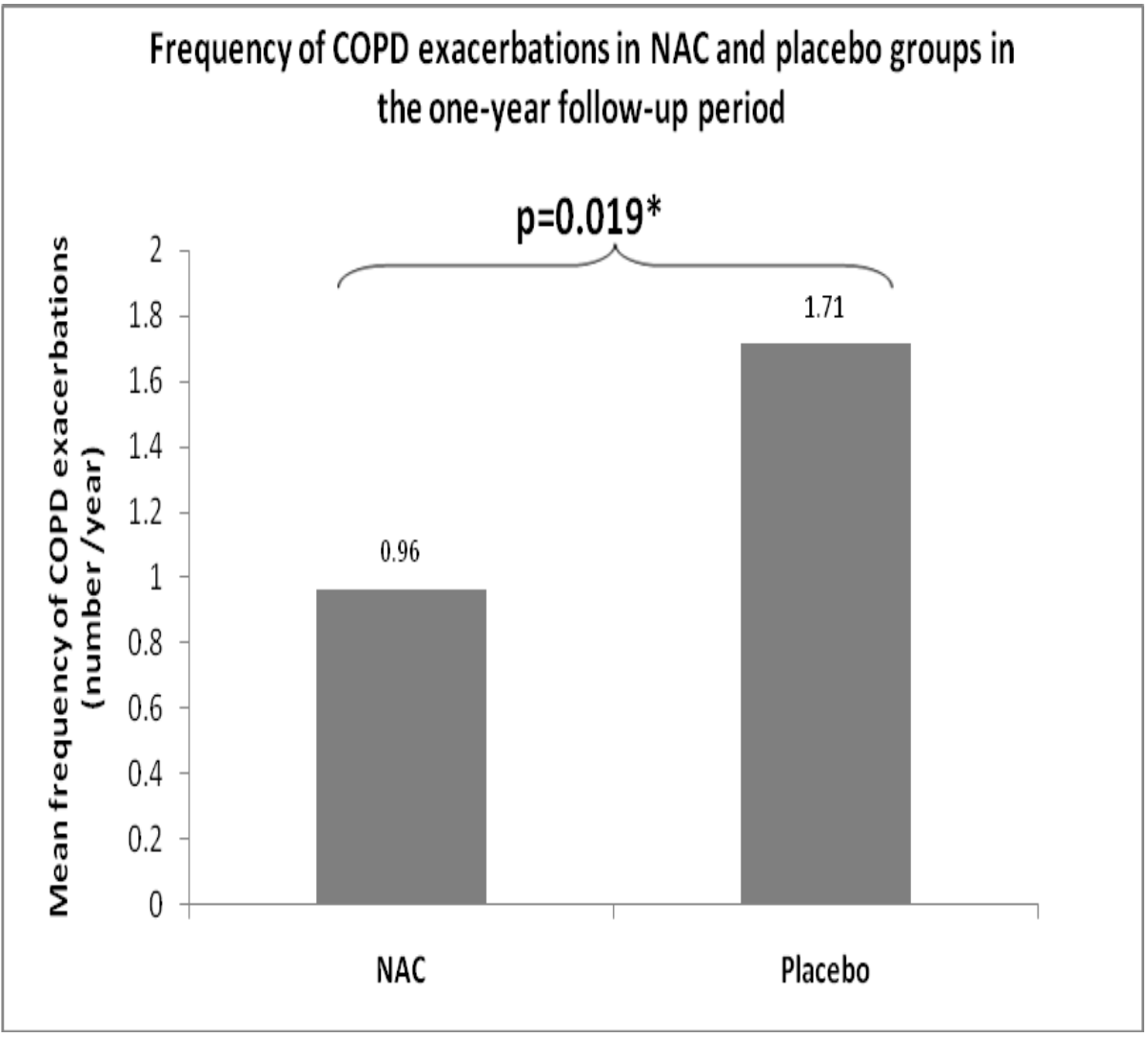


Resistance (X)





Acute exacerbation of COPD (AECOPD)



Significant reduction of exacerbation frequency in patients receiving high dose NAC compared to placebo (P=0.019*)

(0.96 vs 1.71 episodes/ year)

Conclusions

- To the best of our knowledge, this is the first study demonstrating, with sensitive FOT assessment, beneficial effects of high-dose NAC on small airways function in patients with stable COPD.

- High dose NAC could reduce exacerbation rate in stable COPD patients

- Chronic use of high dose of NAC is well tolerated, with no major side effect observed

THANK YOU