



## Case report

# Improved quality of life associated with long-term use of guaifenesin in a patient with chronic obstructive pulmonary disease (COPD) & stable chronic bronchitis: A case report

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## ABSTRACT

We read with interest the recent case reports in this journal on the apparent beneficial effects of long-term, high-dose guaifenesin in patients with chronic respiratory disease. This prompted us to review our own patient database as we also recommend daily guaifenesin to patients who report problems with mucociliary clearance. In our rural primary care practice, we currently have over 20 patients who have taken guaifenesin daily, for more than 3 years as an adjuvant to their prescribed medications for either chronic obstructive pulmonary disease (COPD) and/or stable chronic bronchitis. We report the long-term use of guaifenesin in one such patient with COPD, chronic bronchitis and seasonal allergies who presented with dyspnea and chronic, non-productive cough that impacted his activities of daily living.

## 1. Introduction

Chronic obstructive pulmonary disease (COPD) is frequently associated with chronic cough, bronchospasm, dyspnea on exertion, frequent respiratory infections, fatigue, mucus hypersecretion and decreased mucus transport, all of which restrict daily activities [1–4]. As a chronic, incurable disease, treatment goals include improvement in health-related quality of life (HRQL) [5].

## 2. Case report

In October 2014, a 67 year-old male former 40 cigarettes per day smoker (44 pack years) presented to our practice with debilitating chronic cough and dyspnea. He had a 13 year history of COPD and had suffered from seasonal allergies since childhood. Each year he typically experienced 2–3 acute exacerbations of chronic bronchitis (AECB), characterized by sudden worsening of cough, increased shortness of breath and quantity of phlegm, which typically resulted in hospitalization. Other past medical history included hypertension, hyperlipidemia and chronic cervical disc disease.

Medications included albuterol and budesonide/formoterol (Symbicort; AstraZeneca) inhaler, nebulized ipratropium bromide and albuterol sulfate and gabapentin 300mg bid.

Despite medication, the patient's forced expiratory volume in 1 s

(FEV1) was only 22% of predicted value for age, height and weight and he complained of mucus accumulation in his airway and non-productive “coughing fits” every 2 h, which were worse in the morning and during cold weather and which interfered with activities of daily living and sleep.

Guaifenesin (Maximum Strength Mucinex<sup>®</sup>; Reckitt Benckiser) was prescribed at a dose of 1200mg once daily. The patient began to notice an improvement in his symptoms, most notably improved expectoration and reduced cough frequency, approximately two months after commencing guaifenesin. He is now able to clear an estimated 300 mL of mucus each day, and can breathe easier. He reports this improvement has resulted in better endurance which in turn has enabled him to go outside more and resume many previous activities. Furthermore, he has not experienced any respiratory infections and has only had two AECB in the past three years, neither of which resulted in hospitalization.

FEV1 is now 28% of predicted for age, height and weight – an improvement of 27.3%.

The patient has been on continuous daily guaifenesin therapy for > 3 years. No treatment related side effects have been noted and he plans to continue this course of treatment.

## 3. Discussion

As reported previously, guaifenesin has multiple effects on mucus,

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including increasing the volume of bronchial secretions, decreasing mucus viscosity and promoting more effective expectoration [6–9].

This case supports those observations and suggests that long-term daily use of guaifenesin may have contributed to the patient's improved lung function and perceived quality of life. Additionally, the reduction in acute exacerbations and subsequent hospitalizations may have resulted in overall lower healthcare costs and antibiotic usage. Interestingly, these results were achieved with a daily single dose of Maximum Strength Mucinex® 1200 mg, but we note that this could have been increased, in accordance with the prescribing information, to 2400mg with the addition of a second dose 12 hours later.

Further prospective studies are needed to confirm these observations in a larger patient population.

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### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://>

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