

Healthcare Utilization and Expenditures among Patients with Comorbid COPD and Non-CF Bronchiectasis in US Clinical Practice

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ABSTRACT

Once thought to be a rare disease, there is growing recognition that non-CF bronchiectasis (BE), either by itself or combined with COPD, represents a growing burden on the US healthcare system. Past work does not clearly describe the burden of comorbid non-CF BE and COPD.

Using a large commercial database of healthcare claims, patients were identified who had a diagnosis of bronchiectasis (n=17,917), COPD (n=498,653), or both conditions (n=13,205). Healthcare utilization and expenditures during 2013 were tallied for each group.

Compared to BE alone, COPD+BE is associated with a large increase in hospital visits, hospital days, and ambulatory encounters. Compared to COPD alone, COPD+BE also results in a large increase, though not as great. This work underscores the need to recognize and treat comorbid BE and COPD.

INTRODUCTION

- Non-CF bronchiectasis (BE) is a pulmonary disorder characterized pathologically by permanent bronchial dilatation and severe bronchial inflammation, and clinically by chronic productive cough, hypersecretion of mucus, and recurrent infectious exacerbations
- Surprisingly little is known about the clinical and economic burden of the large number of patients with bronchiectasis in current US clinical practice, particularly in relation to the presence of chronic obstructive pulmonary disease (COPD).

METHODS

- A retrospective cohort design and data from a healthcare claims repository (2009-2013) were employed:
 - Data were deidentified and thus exempt from IRB approval.
- Source population comprised all persons who were aged ≥18 years and had comprehensive health benefits for at least one day during calendar year 2013.
- From the source population, all patients who had evidence of bronchiectasis (ICD-9-CM 494.x) or COPD (ICD-9-CM 491.xx, 492.x, 496) during the period 2009-2013 were selected for inclusion in the study population.
- For purposes of comparison, three cohorts from the study population were identified: BE in the absence of COPD (BE-only), COPD in the absence of bronchiectasis (COPD-only), and BE with concomitant COPD (COPD+BE).
- All-cause healthcare utilization and expenditures during the referent year were annualized, and then summarized using means and corresponding 95% CIs.

RESULTS

- The study population included 17,917 patients with BE-only, 498,653 patients with COPD-only, and 13,205 with combined BE and COPD.
- Levels of all-cause healthcare utilization and expenditures were:
 - Lowest for the BE-only cohort.
 - Somewhat higher for the COPD-only cohort
 - Substantially higher for the COPD+BE cohort
- The annual increase for COPD+BE vs. COPD-only cohorts:
 - Mean number of acute-care hospitalizations per year was 32% higher
 - Number of hospital days per year was 40% higher
 - Hospital expenditures were 27% higher
 - Total healthcare expenditures were 31% higher

Annual Healthcare Utilization and Expenditures

	BE-only	COPD-only	COPD+BE
Number of patients	17,917	498,653	13,205
Mean (95%CI) acute-care hospitalizations	0.35 (0.33-0.36)	0.72 (0.71-0.72)	0.94 (0.91-0.98)
Mean (95%CI) acute-care hospital days	2.0 (1.8-2.2)	4.1 (4.1-4.2)	5.8 (5.5-6.1)
Mean (95%CI) ambulatory encounters	25.9 (25.5-26.3)	30.6 (30.5-30.7)	41.1 (40.4-41.8)
Mean (95%CI) expenditures for acute-care hospitalizations	\$9,153 (8,376-9,930)	\$16,192 (15,990-16,394)	\$20,630 (19,345-21,916)
Mean (95%CI) total healthcare expenditures	\$25,899 (24,876-26,922)	\$35,270 (35,015-35,525)	\$46,252 (44,558-47,946)

Table 1. All-Cause healthcare utilization and expenditures in 2013 among U.S. patients with BE-only, COPD-only, and the combination of COPD and BE.

Relative Impact of Comorbid COPD+BE

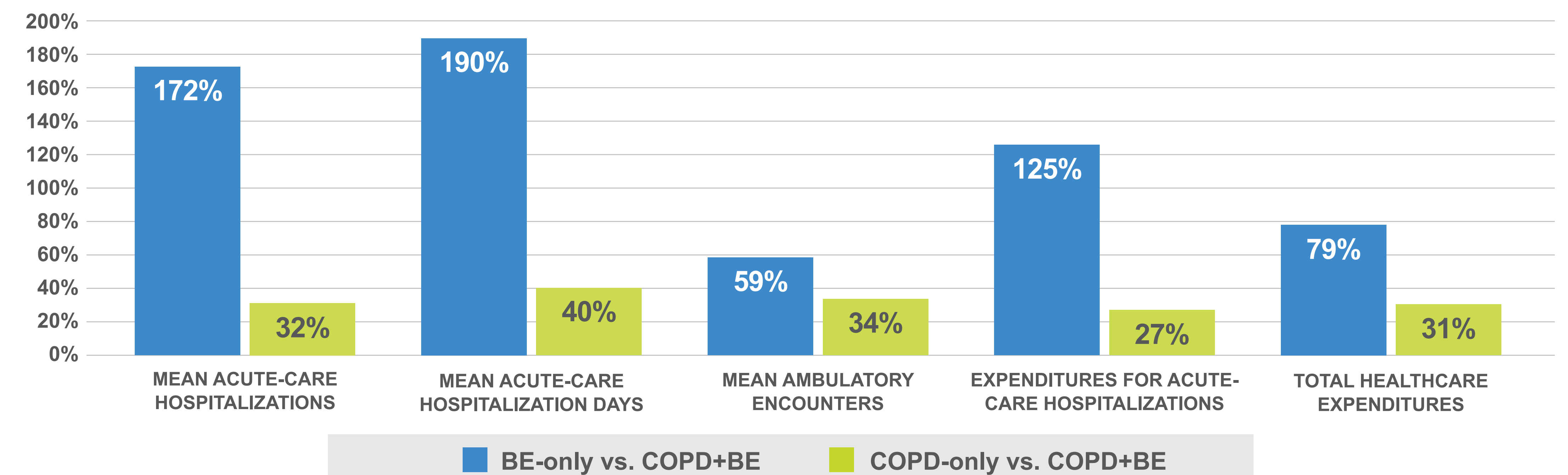


Figure 1. The percent increase of utilization and all cause expenditure for combined COPD+BE compared with either disease state alone. All comparisons were statistically significant (p<0.0001).

DISCUSSION

- Recent work has described the negative clinical impact of comorbid COPD+BE.¹
- This is understood in the context of a repeated cycle of inflammation, exacerbation, and downward decline in patient status.²
- Our data show that patients with comorbid COPD+BE have more healthcare utilization and higher expenditures than patients with COPD alone.
- Early intervention in such patients has the potential to reduce the frequency of exacerbations and associated costs.³
- Therefore, early intervention has the potential to result in reduced economic burden.

CONCLUSIONS

- Levels of healthcare utilization and expenditures are high among patients with COPD and BE in current US clinical practice.
- Clinical and economic burden is notably high among patients with the combination of COPD and BE, emphasizing the importance of identification and treatment of these individuals.

REFERENCES

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