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Clinical Research Summary
BASAVARAJ, ET AL.

HIGH RISK BRONCHIECTASIS PATIENTS DEMONSTRATE BETTER OUTCOMES ON HFCWO COMPARED TO PEP^{1,2}

OVERVIEW

In current clinical practice, airway clearance therapy is prescribed for patients with moderate to severe bronchiectasis (BE).³ Bronchiectasis patients with comorbidities including COPD and Asthma have significantly higher risk of acute exacerbations, hospitalizations and mortality from their illness.⁴

Data presented at the American College of Chest Physicians (CHEST) 2020 conference aimed to evaluate clinical and economic outcomes of high frequency chest wall oscillation (HFCWO) for these higher risk patients*, within the first year of initiation of HFCWO or PEP therapy.

HFCWO results in improved outcomes for high risk bronchiectasis patients.

High risk patients started on PEP had increased utilization of key healthcare resources.¹

STUDY DESIGN

A pre-post analysis of two mutually exclusive cohorts was conducted using the PharMetrics Health Plan Claims Database. Adult patients with non-Cystic Fibrosis bronchiectasis (non-CF BE), high risk Bronchiectasis Aetiology and Comorbidity Index (BACI) score of ≥ 6 , and a claim for HFCWO or PEP between 2009 to 2018 were included. Clinical outcomes, healthcare resource utilization (HCRU) and costs were measured 12-months pre- and post-initiation of therapy.

RESULTS

HFCWO COHORT (N=147)

In the 12 months post-initiation of HFCWO, high risk patients had significant reductions in utilization of key disease-specific healthcare resources and costs.¹⁵

88%

COMORBID COPD

73%↓

DECREASED HOSPITALIZATIONS
(p=0.01)

50%↓

DECREASED ED VISITS
(p=0.20)

63%↓

DECREASED IV ANTIBIOTIC USE
(p=0.01)

73%↓

DECREASED INPATIENT COSTS
(p=0.03)

9%↓

DECREASED OFFICE VISITS
(p<0.04)

PEP COHORT (N=138)

In the 12 months post-initiation of PEP, high risk patients had significant increases in utilization of key disease-specific healthcare resources and costs.¹⁵

74%

COMORBID COPD

2-FOLD ↑

INCREASED HOSPITALIZATIONS
(p=0.31)

5-FOLD ↑

INCREASED ED VISITS
(p=0.06)

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NO CHANGE IN IV ANTIBIOTIC USE

47%↑

INCREASED INPATIENT COSTS
(p=0.04)

17%↑

INCREASED OFFICE VISITS
(p=0.03)

* BACI score of ≥ 6 (directly correlated with the BSI)⁴

HFCWO demonstrates sustained improvements in clinical and economic outcomes at two years in high risk bronchiectasis patients²

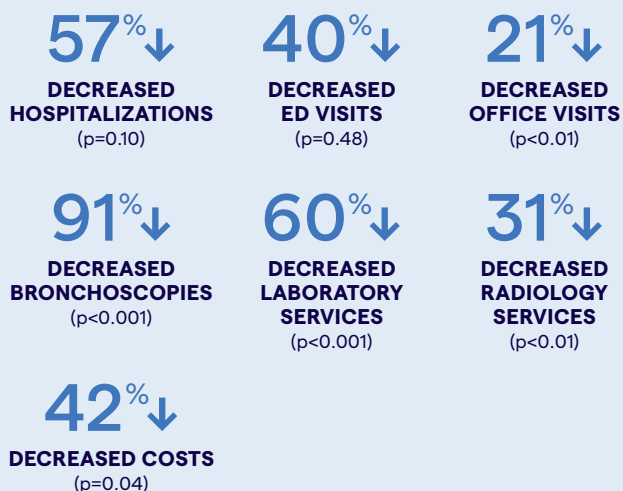
STUDY DESIGN

For a two-year follow up review of the high risk BE cohort prescribed HFCWO, all cause and disease-specific healthcare care resource utilization and costs, as well as clinical outcomes, were measured post initiation of therapy and compared to baseline.

RESULTS

HFCWO PATIENTS AT 2 YEARS (N=80)

Year 2 post-initiation of HFCWO, patients sustained/ maintained significant reduction in utilization of key disease-specific healthcare resources and costs.



In patients with BE at high risk of morbidity and mortality:^{1,2}

- **1 year** of HFCWO therapy resulted in significantly improved clinical outcomes, with reduced hospitalizations, antibiotic use and other health care resource utilization. Patients started on PEP had less favorable outcomes.
- **2 years** of HFCWO therapy resulted in sustained improvement in clinical and economic outcomes.

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References

- ¹ Basavaraj A, Shah D, DeKoven M, et al. Clinical outcomes and healthcare resource utilization in adult high-risk patients with non-cystic fibrosis bronchiectasis using high frequency chest wall oscillation and positive expiratory pressure therapy. CHEST Oct 2020, Vol 158, Issue 4, Suppl. A1695-1696. doi: <https://doi.org/10.1016/j.chest.2020.08.1512> and poster presented (Hillrom reference APR140901).
- ² Basavaraj A, Shah D, DeKoven M, et al. Two year clinical outcomes and healthcare resource utilization in adult patients with high-risk non cystic fibrosis bronchiectasis on high frequency chest wall oscillation. CHEST Oct 2020, Vol 158, Issue 4, Suppl. A1693-1694 doi: <https://doi.org/10.1016/j.chest.2020.08.1511> and poster presented (Hillrom reference APR140801).
- ³ Basavaraj, DeKoven, Shah, et al. Prescribing Patterns in the United States of High Frequency Chest Wall Oscillation and Other Airway Clearance Therapies in Adult Patients with Non-Cystic Fibrosis Bronchiectasis. American Journal of Respiratory and Critical Care Medicine 2020;201:A7759. https://www.atsjournals.org/doi/abs/10.1164/ajrccm-conference.2020.201.1_MeetingAbstracts.A7759.
- ⁴ McDonnell MJ, Aliberti S, Goeminne PC, et al. Comorbidities and the risk of mortality in patients with bronchiectasis: an international multicentre cohort study. Lancet Respir Med. 2016;4(12):969-979. doi:10.1016/S2213-2600(16)30320-4. [https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(16\)30320-4/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(16)30320-4/fulltext).
- ⁵ Data on file at Hillrom.

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