



NIV therapy for COPD – Latest evidence

Hypercapnic patients are primary candidates for non-invasive ventilation (NIV) as NIV seeks to improve the patient's CO₂ exchange and support breathing when the patient's own physiology cannot do so effectively. Despite a myriad of clinical evidence supporting the use of NIV in the hospital for sudden deterioration of hypercapnic respiratory failure due to an exacerbation of COPD, typical treatment after stabilization and discharge often only includes supplemental oxygen and medications. The role of NIV in the home has yet to be formally adopted, but researchers continue to study the impact of this therapy on reducing hospital readmissions and improving quality of life for patients with COPD.

Two recent updates in the study of NIV for COPD have supported broadening the use of home NIV as a standard therapy regimen for recently hospitalized hypercapnic COPD patients after discharge. The information below summarizes the new publication findings demonstrating the potential reduction in COPD hospital readmissions for patients experiencing severe hypercapnia and acute COPD exacerbations.

Abbreviations

COPD: chronic obstructive pulmonary disease
NIV: non-invasive ventilation
CO₂: carbon dioxide
O₂: oxygen

HOT-HMV: home oxygen therapy – home mechanical ventilation
GOLD: global initiative for chronic obstructive lung disease
HR: hazards ratio



New study shows using NIV therapy to treat patients with COPD at home significantly reduces risk of re-hospitalization and death¹

The multicenter, randomized, controlled trial known as HOT-HMV evaluated hypercapnic COPD patients who were hospitalized, and assessed whether adding home NIV to home oxygen therapy could increase the length of time these patients went without re-hospitalization or death.

- Patients in the study who received home NIV therapy in addition to oxygen therapy had a 51% decreased risk of re-hospitalization or death, compared to those who received oxygen therapy only (HR = 0.49, p=0.002).
- Patients treated with NIV and oxygen therapy at home went a median of 4.3 months without a hospital admission or death, compared to 1.4 months with oxygen only.

Key takeaway

These results are important because they show that patients with hypercapnic COPD who were given an NIV device for use in the home saw significantly reduced risk of re-hospitalization and death after an acute exacerbation of their disease.

Updated 2017 GOLD report recommends home NIV for hypercapnic, recently hospitalized COPD patients²

The GOLD Consortium released an updated report on November 16, 2016, offering new recommendations for the management of COPD patients. This update offers a more proactive recommendation for use of NIV therapy to reduce hospital readmissions.

- NIV may improve hospitalization-free survival in selected patients after recent hospitalization, particularly those with pronounced daytime persistent hypercapnia (PaCO₂ ≥ 52 mmHg, Level Evidence = B).

Key takeaway

This update from the GOLD Report 2013 offers a recommendation for use of home NIV to treat hypercapnic COPD patients, based on recent published clinical evidence.

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1. Murphy PB et al. Effect of Home Noninvasive Ventilation with Oxygen Therapy vs Oxygen Therapy Alone of Hospital Readmission or Death After an Acute COPD Exacerbation. JAMA 2017; doi:10.1001/jama.2017.4451.

2. Vogelmeier CF et al. Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease 2017 Report. Am J Respir Crit Care Med. 2017; 195(5):557–582.