Addition of in-home noninvasive ventilation to oxygen therapy improves outcomes following COPD exacerbation

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Among patients with an excess of carbon dioxide in their blood (persistent hypercapnia) following a flare-up (acute exacerbation) of chronic obstructive pulmonary disease (COPD), in-home use of a mask and machine to support breathing in addition to home oxygen therapy prolonged the time to hospital readmission or death, according to a study published by *JAMA*. The study is being released to coincide with its presentation at the 2017 American Thoracic Society International Conference.

Chronic obstructive pulmonary disease is characterized by recurrent flare-ups that can cause intermittent periods of severe clinical deterioration requiring hospitalization and ventilator support. To investigate the effect of home noninvasive ventilation (NIV; use of a mask and machine to support breathing) plus oxygen on time to hospital readmission or death, Nicholas Hart, Ph.D., of Guy's and St. Thomas' NHS Foundation Trust, London, and colleagues randomly assigned patients with persistent hypercapnia after a COPD flare-up to home oxygen alone (n = 59) or home oxygen plus home NIV (n = 57).

Sixty-four patients completed the 12-month study, with 28 receiving home oxygen alone and 36 receiving home oxygen plus home NIV. The median time to readmission or death was 4.3 months in the home oxygen plus home NIV group vs 1.4 months in the home oxygen alone group. The 12-month risk of readmission or death was 63 percent in the home

oxygen plus home NIV group vs 80 percent in the home oxygen alone group. At 12 months, 16 patients had died in the home oxygen plus home NIV group vs 19 in the home oxygen alone group.

Several limitations of the study are noted in the article, including that the lack of a double-blind design for this trial is a potential criticism. However, the use of a sham device would have the potential to worsen respiratory failure.

"These data support the screening of patients with COPD after receiving acute noninvasive ventilation to identify persistent hypercapnia and introduce home noninvasive ventilation," the authors write.

More information: *JAMA* (2017). jamanetwork.com/journals/jama/… .1001/jama.2017.4451

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