

Efficacy and safety of nasal high-flow oxygen in COPD patients.

Vogelsinger H, Halank M, Braun S, Wilkens H, Geiser T, Ott S, Stucki A, Kaehler CM6.

BACKGROUND:

Nasal high-flow oxygen therapy (HFOT) is a novel treatment option for patients suffering from acute or chronic respiratory failure. Aim of our study was to compare safety and efficacy of HFOT with those of conventional oxygen treatment (COT) in normo- and hypercapnic COPD patients.

METHODS:

A single cohort of 77 clinically stable hypoxemic patients with an indication for long-term oxygen treatment (LTOT) with or without hypercapnia successively received COT and HFOT for 60 min each, including oxygen adaption and separated by a 30 min washout phase.

RESULTS:

HFOT was well-tolerated in all patients. A significant decrease in PaCO₂ was observed during oxygen adaption of HFOT, and increased PaO₂ coincided with significantly increased SpO₂ and decreased AaDO₂ during both treatment phases. Even at a flow rate of 15 L/min, oxygen requirement delivered as air mixture by HFOT tended to be lower than that of COT (2.2 L/min). Not only was no increase in static or dynamic lung volumes observed during HFOT, but even was a significant reduction of residual lung volume measured in 36 patients (28%).

CONCLUSIONS:

Thus, short-term use of HFOT is safe in both normocapnic and hypercapnic COPD patients. Lower oxygen levels were effective in correcting hypoxemic respiratory failure and reducing hypercapnia, leading to a reduced amount of oxygen consumption. Long-term studies are needed to assess safety, tolerability, and clinical efficacy of HFOT.