RELIEF OF DYSPNEA
WITH MOUTHPIECE VENTILATION (MPV)
IN PATIENTS WITH COPD EXACERBATION (AECOPD)

NSCPM Module 6
May 2019

Sirpa Leivo-Korpela
MD, PhD, clinical lecturer
Tampere University Hospital and University of Tampere

Pirkanmaan sairaanhoitopiiri

Dyspnea

Very common and burdensome symptom

- > 90% in COPD
- 50-90 % in lung cancer
- 30-70 % in other cancers
- 60-80 % in heart failure

In advanced COPD and at the time of AECOPD

response to normal dyspnea treatment is diminished

Mouthpiece ventilation (MPV)

a type of noninvasive ventilation (NIV) that can be used to provide portable, daytime ventilation without mask

Mouthpiece ventilation (MPV)

In patients with neuromuscular diseases

- reduces dyspnea
- decreases the work of breathing
- improves the quality of life by improving the ability to cough, speech and eat when compared to mask NIV

Bach et al Chest 1993;103;174-82; Khirani et al Care 2014;59;9:1329-1336

In patients with AECOPD

- helps to normalize hypoventilation
- its efficacy on subjective dyspnea remains unknown

Nicolini et al Respiratory Care 2014;59;12:1825-1831; Smith et al Respirology 2012;17:300-3007

Aim and methods

to assess the effectiveness of mouthpiece ventilation in relieving dyspnea in patients with AECOPD

a pilot study with case-reports

patients were recruited in the wards of Tampere University Hospital

Inclusion criterions

acute COPD exacerbation which leads hospitalization

with at least moderate dyspnea

- NRS (Numeric Rating Scale) ≥ 4

without significant hypoventilation

- blood pH ≥ 7,35 and pCO_2 ≤ 6,0 kPa

Methods

a study ventilator: Trilogy 100® (Philips Respironics) with mouthpiece

Study periods: 15 minutes and next 24 hours

The primary end-point:

- to assess relief of dyspnea by NRS after 15 minutes on treatment

Secondary end-points:

- patient's willingness to use MPV and
- relief of dyspnea after 24 hours on treatment

Also pain, anxiety, gas exchange parameters, respiratory rate, pulse and blood pressure were measured

Possible benefits and side effects were asked both from patients and caregivers

Preliminary results

COPD-patients N = 10	Mean (range)
Age (yrs)	75.1 (62-83)
FEV_1 (l)	0.92 (0.4-1.3)
FEV_1 pred. (%)	36 (21-53)
DL (%)	45 (25-60)
Pack years (yrs)	45 (30-60)

7 patients had severe obstruction (GOLD 3) (FEV_1 % pred. 30-49)
2 very severe obstruction (GOLD 4) (FEV_1 % pred. < 30)
1 moderate obstruction (GOLD 2) (FEV_1 % pred. 50-79)

Elämän tähden

Preliminary results

- all patients had inhalation medication for COPD
- nine patients (9/10) lived at home
  - *two of them needed home care*
- 1/10 lived in a nursing home
- only two patients had DNR-decision
- one patient
  - *used LTOT and*
  - *had morphine as a rescue medication for dyspnea*
- until 31st of March in 2019
  - *three of the recruited patients had died in 7,15 and 20 mo after the intervention, respectively*
- no fatal complications occurred

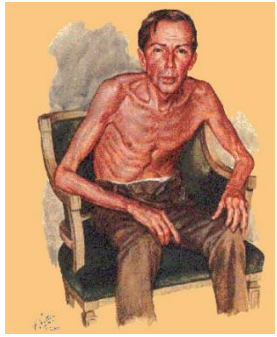
NIV in palliative settings

should only be used if it

- provides symptomatic relief
- is well tolerated
- doesn´t prevent patient's communication ability
- doesn´t prolong the normal dying process

it is reasonable to investigate if MPV-NIV is also useful in treating of dyspnea in advanced COPD

Conclusion



The entire study results are not yet analyzed, but

our hypothesis is that

MPV might be a rational treatment option for dyspnea relief during end-of-life care of patients suffering from COPD

More clinical trials are needed in this area

Thank you for your attention!