

Journal Watch

A Randomized, Double-Blind, Crossover Trial of the Effect of Oxygen on Dyspnea in Patients with Advanced Cancer.

Philip J, Gold M, Milner A, Di Iulio J, Miller B, Spruyt O. J Pain & Symptom Manage 2006; 32(6):541-550.

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Abstract

Dyspnea is a common symptom in palliative care. Despite this, there is uncertainty regarding the role of oxygen to treat the symptom in patients with advanced illness. This randomized, double-blind, crossover trial examined the effect of oxygen versus air on the relief of dyspnea in patients with advanced cancer. Following the blinded administration of air and oxygen via nasal prongs, 51 patients rated dyspnea and indicated preferences for the blinded treatments. On average, patients improved symptomatically with both air and oxygen, and there were no significant differences between the treatments. The subgroup of 17 hypoxic patients overall did not demonstrate a significant difference between air and oxygen, despite having improved oxygen saturations when administered oxygen. Hypoxia was corrected in 13 of 17 patients using the treatment dose of 4 L/min of oxygen. The experience of dyspnea is a complex, multifactorial phenomenon, with oxygen tension not correlating with the subjective experience. The administration of either air or oxygen via nasal prongs on average confers improvement of this symptom.

Comments

Strengths/uniqueness:

- addresses an important/relevant clinical question: oxygen vs. air for dyspnea in palliative cancer patients
- good methodological design: randomized, double-blinded
- crossover design allows for the patient to control for themselves
- the inclusion/exclusion criteria for selected patients reflect the population we deal with: both in- and out-patient palliative population
- looks at hypoxic and non-hypoxic patients
- compared to previous studies addressing this question, it has a large sample size (n = 51)
- good retention of patients
- patient baseline characteristics in both treatment arms are fairly similar
- uses the Visual Analog Scale (VAS) to measure degrees of dyspnea

- results are reliable: shows that there is no significant differences between air or oxygen in either VAS or preferences. 30 mins after treatment has stopped, VAS returns to scores approximately equal to those before the first gas was given
- reinforces the multidimensional experience of dyspnea (subjective experience): ie: that dyspnea is not directly related to oxygen saturation levels

Weaknesses:

- study does not describe whether allocation concealment was done
- Table 1 does not show the suspected cause of dyspnea for the patients in each of the treatment arms.
- study valid for dyspnea at rest, and may not apply when looking at patient's dyspnea during activity.
- VAS tested after 15 mins. Unsure of results after long term administration of either gas.

Relevance to Palliative Care:

We commonly will trial oxygen for comfort in a patient with dyspnea; this study confirms previous work done.