High-flow nasal oxygen therapy for respiratory support in SARS-CoV-2 pneumonia in adult intensive care patients. A Belgian observational study.

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Introduction

The worldwide COVID-19 pandemic was a major challenge for all medical actors and in particular for intensive care units. Its management is essentially supportive and in its severe form, requires high-flow oxygen therapy for which the ideal application modalities remain to be defined.

Objectives

This study compares data from two waves during which the management differed substantially: early invasive ventilation during the first wave versus high flow oxygen therapy (Optiflow™ Nasal High Flow, Fisher & Paykel Healthcare) with salvage mechanical invasive ventilation during the second wave.

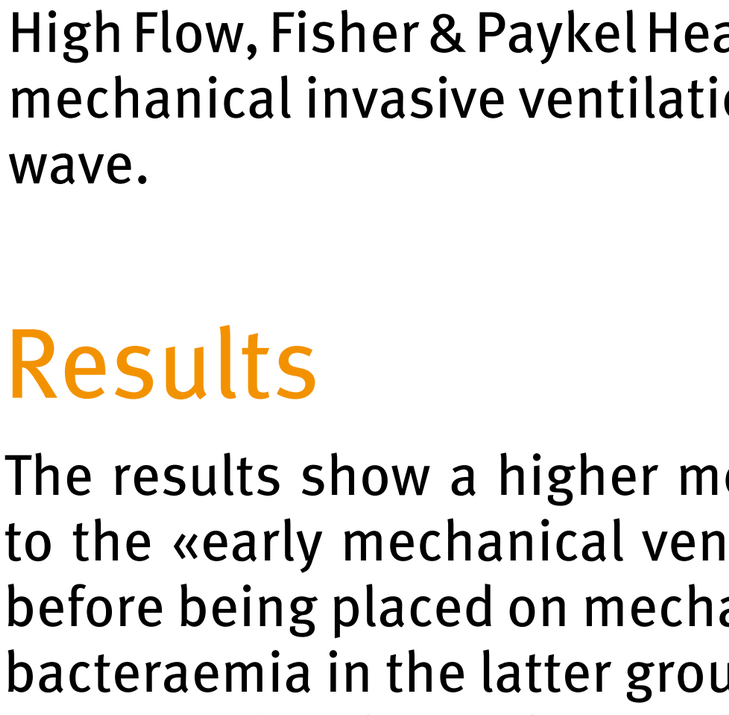
Methods

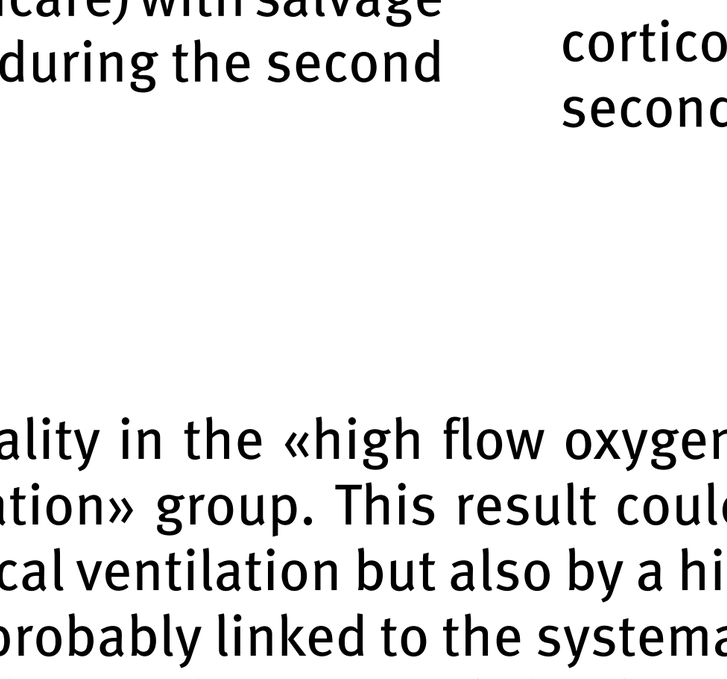
This single-center observational study included 108 patients: 21 from the first wave and 87 from the second. The two groups were comparable in terms of age, sex, obesity, hypertension, diabetes, and underlying lung disease. The study was conducted from March 2020 to March 2021.

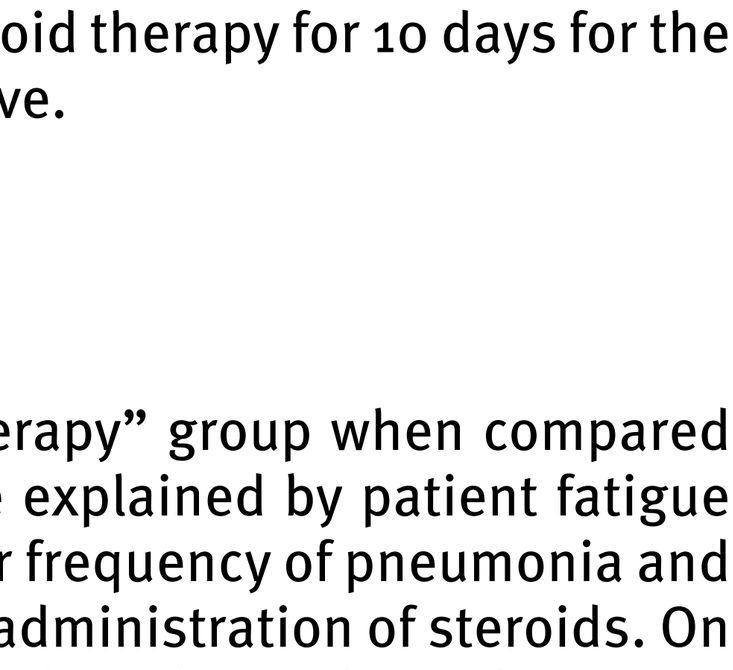
The primary outcome was length of hospitalisation. The secondary outcomes were duration of mechanical ventilation and patient mortality at 28 days. As the two groups were matched, the main difference was dexamethasone corticosteroid therapy for 10 days for the second wave.

Results

The results show a higher mortality in the «high flow oxygen therapy" group when compared to the «early mechanical ventilation» group. This result could be explained by patient fatigue before being placed on mechanical ventilation but also by a higher frequency of pneumonia and bacteraemia in the latter group probably linked to the systematic administration of steroids. On the other hand, the duration of hospitalisation and the duration of mechanical ventilation are shorter in the high flow oxygen therapy group.







Conclusions

High-flow oxygen therapy can be considered as an alternative to conventional ventilation in the event of respiratory distress following a SARS-CoV-2 infection. Further research should be co-considered.

Conflict of interest: None declared. This study was conducted in accordance with the Declaration of Helsinki.