

Reviewer 1 v.1

Comments to the authors

This is an interesting manuscript about the outcomes and cost on patients which received long time HFOT. 71 patients were included in this study.

However, there were two different groups of patients included in this article. Patients received HFOT for oxygenation or for humidification.

The main findings were:

For patients with HFOT goaled to improve oxygenation, they needed more oxygen flow. Patients in nHFOT groups received significantly higher oxygenation and higher flow. HFOT presented a positive effect on less hypercapnea. PaCO₂ present a reduction of -0.51kPa [-1.44 to 0.1] (p=0.034) after nHFOT. However, the median survival of these patients was 3.6 months. By a subgroup analysis, the survival rate was determined by the diseases and the cost dependent on the necessity of higher oxygen flow.

In contrast, in the tHFOT group for humidification, number of admissions for exacerbation decreased by -1/year [-2 to 0] (p=0.015). 51 (72%) patients were discharged home and 20 (28%) in a post-acute re-enablement facility. Median survival following HFOT was 7.5 months. Monthly costs associated to home delivery in the tHFOT group: 296 euros [261 – 475]. The monthly cost was significantly lower in tHFOT group. (p<0.001).

The use of long-term HFOT allows discharge patients from acute care facilities at a reasonable cost to improve oxygenation or humidification. The cost is dependent on the oxygen flow which was determined by patients idesease. For nHFOT to improve oxygenation, the disease state determines the survival rate. However, for tHFOT to improve humidification, HFOT effectively decreases the readmission rate.

I suggest the authors to address on the outcomes on different groups and make some suggestions on considerations on applying HFOT on patients in each group.