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The Effect of Tele-Consultation Between a Hospital-Based Nurse and a COPD Patient

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Abstract. Patients admitted with exacerbation COPD (AECOPD) were at hospital discharge randomly assigned (1:1) to either daily teleconsultation for one week between hospital-based telenurses and patients with severe COPD or conventional treatment. Addition of one week of teleconsultations was as safe and effective as conventional treatment, but it did not significantly reduce readmissions or affect mortality.

Keywords. Telemedicine, nurse video-consultation, Tele-consultation, COPD consultation, readmission

1. Introduction

Hospitalization with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) causes a major burden for the COPD patients and is a common cause for admissions and readmissions to medical wards (1, 2). The objectives was to investigate the effect of one week of daily real-time telemedicine video consultations (teleconsultation) between hospital-based nurses specialized in respiratory diseases (telenurses) and patients with severe COPD discharged after AECOPD in addition to conventional treatment compared to the effect of conventional treatment. Primary outcome consisted of the total number of readmissions within 26 weeks after discharge.

2. Methods

Patients admitted with AECOPD at two different locations were recruited at hospital discharge and randomly assigned (1:1) to either daily teleconsultation for one week in addition to conventional treatment, the TVC group or to conventional treatment, the CT group. The patients’ telemedicine equipment consisted of a briefcase with built-in computer including a web camera, microphone and measurement equipment.
3. Results

A total of 266 patients (mean age 71.5 years, SD 9.5 years) were allocated to either TVC (n=132) or CT (n=134). There were no differences within the two groups according to baseline characteristic.

No significant difference in readmission was noted between the groups (p = 0.62).

Table 1: Readmission

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Teleconsultation (n=121)</th>
<th>Conventional treatment (n=121)</th>
<th>Difference between groups</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary outcome</td>
<td>Mean (SD)</td>
<td>Mean (95% CI mean)</td>
<td>Mean (95% CI mean)</td>
<td>0.62</td>
</tr>
<tr>
<td>Number of readmissions after 26 weeks</td>
<td>1.42 (2.07)</td>
<td>1.56 (2.40)</td>
<td>0.14 (-0.40-0.68)</td>
<td>0.62</td>
</tr>
<tr>
<td>Secondary outcome</td>
<td>Mean (SD)</td>
<td>Mean (95% CI mean)</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>Number of readmissions with AECOPD: 26 weeks</td>
<td>1.22 (1.92) (n=121)</td>
<td>1.28 (2.10) (n=121)</td>
<td>0.06 (-0.43-0.54)</td>
<td>0.24</td>
</tr>
<tr>
<td>Number of days readmitted for any cause: 26 weeks</td>
<td>4.94 (8.24) (n=121)</td>
<td>6.37 (11.44) (n=121)</td>
<td>1.43 (-0.97-3.84)</td>
<td>0.23</td>
</tr>
<tr>
<td>Number of days readmitted for AECOPD: 26 weeks</td>
<td>3.88 (7.39) (n=121)</td>
<td>5.16 (9.73) (n=121)</td>
<td>1.29 (-0.80-3.37)</td>
<td>0.23</td>
</tr>
</tbody>
</table>

4. Discussion

The duration of the intervention was only a week, which is much shorter than other telemedicine trials. It were the frailest COPD patients. They were elderly, the majority had severe or very severe COPD, they had previously been admitted with AECOPD, they had multiple comorbidities, they were current or previous smokers and 10 % used LTOT. These are all factors, which are known to relate to increased mortality and morbidity with increased readmissions.

References