Education of patients receiving oxygen therapy

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Background
Oxygen is a dangerous medication because of its oxidizing properties. Its use can be difficult for patients with respiratory insufficiency. Because of the impact on quality of life, the oxygen-dependent patients have a low therapeutic adherence (1). This can lead to an increase of rehospitalizations and comorbidities. We have proposed education sessions about the proper use of oxygen for these patients.

Objective
The aim of the study was to describe a population receiving oxygen therapy and assess the impact of educational session on patients knowledge.

Materials and Methods
Documents for the session came from a collaboration between pharmacists, pulmonologists, physiotherapists, nurses and an oxygen provider service. It deals with pathophysiology, oxygen safety, different types of equipment and travelling with oxygen in France or abroad.

Sessions last 2 hours, once a month, and are accessible to all patients of the institution with oxygen therapy. A hospital pharmacist and a pharmacist from the oxygen provider service moderate the course by group from 1 to 10 patients.

Surveys are given to patients during this education: Survey A to characterize the population, Survey B to measure the improvement of their knowledge before/after the course (contain 20 questions, each question worth 1 point), and Survey C to assess their satisfaction.

Survey are anonymized by a specific code to each patient.

Results
We collected data from 43 patients. The mean age is 66.1 years and the sex ratio is 1.26 (m/f). The most representative pathology in our population is COPD and emphysema with respectively 72.1% and 55.8%. 79.1% are retired and about a half are single (53.5%), 74.4% received oxygen since one year at least and 48.8% of them have been hospitalized for pulmonary reason during the last year. 60.5% of patients never received any education about oxygen therapy and 32.6% were non-observant for ambulation with oxygen.

After this education, the progression of patients is on average 4.6 point/20. The difference is significant (p<0.01, unilateral Student test, paired values).

All patients are satisfied with this education, but 20.9% of them say they have felt concentration difficulties.

<table>
<thead>
<tr>
<th>Age (y)</th>
<th>Sex ratio</th>
<th>Pathology</th>
<th>Activity</th>
<th>Family</th>
<th>Duration with oxygen</th>
<th>Health care utilization</th>
<th>Education</th>
<th>Ambulation</th>
<th>Leave home</th>
<th>Patient’s score improvement after education</th>
<th>Patients’s satisfaction after education</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-49</td>
<td>1.0</td>
<td>COPD</td>
<td>Part-time</td>
<td>Single</td>
<td>25 years</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>0.032 ± 0.021</td>
<td><strong>Very much</strong></td>
</tr>
<tr>
<td>50-74</td>
<td>1.0</td>
<td>Emphysema</td>
<td>Part-time</td>
<td>Joint/Married</td>
<td>5 years</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>0.025 ± 0.017</td>
<td><strong>Enough</strong></td>
</tr>
<tr>
<td>≥75</td>
<td>1.0</td>
<td>Asthma</td>
<td>Full-time</td>
<td>Divorced</td>
<td>10 years</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>0.026 ± 0.022</td>
<td><strong>A little</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pulmonary</td>
<td>Full-time</td>
<td>N/A</td>
<td>2 years</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>0.019 ± 0.016</td>
<td><strong>Not at all</strong></td>
</tr>
</tbody>
</table>

Conclusion and Relevance
Almost 1/3 of these patients are non-adherent and 2/3 of them never had education about oxygen therapy. The use of this essential medication must be considered at risk because it requires safety information, and can cause disorders in case of misusing.

The results of this study highlights the interest of the education for these patients. These patients have chronic hypoxemia which causes disturbances in concentration (2) and could makes therapeutic education difficulties. We will test in a new part of the study a participative education with electronic devices to keep their attention.

References