Preoperative functional status is not associated with postoperative surgical complications in low risk patients undergoing esophagectomy
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Preoperative functional status is not associated with postoperative surgical complications in low risk patients undergoing esophagectomy

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Introduction

- Esophagectomy is associated with 60% of postoperative complications (POC).1
- Preoperative physical activity and training decrease postoperative pulmonary en cardiac complications in major thoracic surgery.
- This has hardly been evaluated in patients undergoing esophagectomy.
- If there is an association with postoperative complications, patients could benefit from a tailored physiotherapeutic intervention.

Methods

**Measurements:** Patients were measured 1 day before surgery on aspects of functional status and compared to predictive values (figure 2).

**Outcome:** POC were measured according to the Clavien-Dindo classification for postoperative complications, where complications > grade 2 require surgical or radiological interventions.2

**Statistical analysis:** Univariate and multivariate backward regression analysis was used to determine the association between functional status and POC.

Results

- Preoperative functional status was on average higher than predicted (table 1).
- Despite high preoperative functional status, 55 patients developed a POC (61.1%) of which 32.2% were gastrointestinal and 19.1% pulmonary.
- 28 patients with POC developed more than one complication.
- 26 patients suffered from a grade 3a complication or worse (figure 3).

Discussion & Conclusions

- IMS, HGS, physical activities and QoL were not associated with POC, because of:
  - A high preoperative functional status
  - A high rate of gastrointestinal complications, obviously unrelated to functional status.
  - A relatively low percentage of pulmonary complications.

Recommendations

- Carefully assess the association between preoperative functional status and POC and relate this to patient- and surgery specific characteristics, before indicating a preoperative physiotherapy intervention.
- Risk stratification should be applied to determine who might benefit from a preoperative physiotherapy intervention.

Participants

From March 2012 to October 2014, 94 patients scheduled for esophagectomy (figure 1) at the outpatient clinic of a large tertiary referral center were eligible for the study.

Mean age (s.d.) was 63.8 years (9.4) and 74 patients were male.

Figure 1: Esophagectomy with gastric tube reconstruction.

Figure 2: Aspects of functional status measured.

Figure 3: Clavien-Dindo classification.

<table>
<thead>
<tr>
<th>Indicator of functional status</th>
<th>IQR</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS (kg), mean (s.d.)</td>
<td>62.2 (36.5)</td>
<td></td>
</tr>
<tr>
<td>Percentage of predicted IMS, mean (s.d.)</td>
<td>12.1 (42.7)</td>
<td></td>
</tr>
<tr>
<td>HGS (kilograms), median (i.q.r)</td>
<td>42.5 (15.5)</td>
<td></td>
</tr>
<tr>
<td>Percentage of predicted HGS, mean (s.d.)</td>
<td>116.0 (30.5)</td>
<td></td>
</tr>
<tr>
<td>Physical activities (kcal/day), median (i.q.r)</td>
<td>855.7 (707.5)</td>
<td></td>
</tr>
<tr>
<td>QoL, median (i.q.r)</td>
<td>83.3 (16.7)</td>
<td></td>
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</tbody>
</table>

Table 1: Preoperative functional status.

<table>
<thead>
<tr>
<th>Univariate analysis</th>
<th>Multivariate analysis</th>
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<tbody>
<tr>
<td>Odds Ratio</td>
<td>P-value</td>
</tr>
<tr>
<td>Conventional risk factors</td>
<td></td>
</tr>
<tr>
<td>ASA cl. I vs. II</td>
<td>0.63 (0.54, 0.74)</td>
</tr>
<tr>
<td>Smoking</td>
<td>2.88 (0.94, 8.79)</td>
</tr>
<tr>
<td>Physical Activities (kcal/day)</td>
<td>1.00 (1.00, 1.01)</td>
</tr>
</tbody>
</table>

Table 2: Results after multivariate analysis.

References


Contact details

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Powerpoint presentation