Physical exercise for palliative care cancer patients

A randomized clinical phase II trial


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Background

• Physical exercise among cancer patients with curative intent show effects on (Speck et al, 2010):
  • Physical fitness
  • Patients reported physical functioning
  • Fatigue

• Limited evidence and no randomised trials conducted among palliative patients (Courneya, 2009, Lowe et al., 2009)
Background - pilot

Oldervoll et al., Palliative and Supportive Care 2005; JPSM 2006; Lowe et al., Supportive Oncol., 2009
Aim of the study

- Investigate the effect of physical exercise on fatigue, physical performance and health related quality of life in palliative care cancer patients
Design

• National phase II multicenter randomised trial

• Stratified by:
  – Age
  – Gender
  – Clinician rated performance status (KPS)
  – Place of inclusion

• Randomised to:
  – (a) physical exercise group or
  – (b) usual care group
Primary and secondary endpoints

• **Primary endpoint:**
  Fatigue (Fatigue questionnaire)
  – Total fatigue (0-33)
  – Physical fatigue (0-21)
  – Mental fatigue (0-12)

• **Secondary endpoints:**
  Physical performance (sit to stand, grip strength, maximal step length, shuttle walk)

Symptoms and functioning (EORTC QLQ-C30)
Exercise programme (for the ETG)

• 8-week period
• Twice a week at the hospital
• 60 minutes each time
• 6-8 patients in the group

• Circuit training tailored to the physical level of each patient
• Combination of endurance and resistance exercises
• Practice on functions of importance to be independent in daily living
Statistics

- Analysis of covariance (ANCOVA)
- Data analysed using both:
  - Multiple imputation for missing data (MI) (main analysis)
  - Complete case analysis (CCA)
Results - study flow

Patients randomized (n = 231)

Physical exercise (n = 121)
- Completed (n = 78)
- Dropouts (n = 43)

Usual care (n = 110)
- Completed (n = 85)
- Dropouts (n = 25)

8-weeks intervention period
## Patients

<table>
<thead>
<tr>
<th></th>
<th>ETG (n = 121)</th>
<th>UCG (n = 110)</th>
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</thead>
<tbody>
<tr>
<td>Female (%) n</td>
<td>67 (81)</td>
<td>57 (63)</td>
</tr>
<tr>
<td>Age (range)</td>
<td>62.6 (30-86)</td>
<td>62.2 (24-86)</td>
</tr>
<tr>
<td>KPS</td>
<td>77.8 (10.3)</td>
<td>80.9 (11.4)</td>
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<tr>
<td>Weight</td>
<td>70.4</td>
<td>72.2</td>
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<tr>
<td>Ongoing chemotherapy (%)</td>
<td>54</td>
<td>56</td>
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<tr>
<td>Comorbidities (%)</td>
<td>58</td>
<td>46</td>
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Results – Drop outs and survival

• **Drop outs**
  – Significantly higher drop out rate in the exercise group than in the control group (35 % vs 23 %)
  – Most frequent reason for withdrawal was **disease progression**
    • Deaths, did not adhere, dropped out before start

• **Survival**
  – No difference between the groups (16 and 17 months for those who completed)
  – Significantly lower survival in those who dropped out (5 months)
Results - total fatigue

No overall effect: (p = 0.53)
Results - walking ability

Overall statistical and clinical significant effect in favor of the exercise group (p = 0.008)
Results - hand-grip strength

Overall statistical and clinical significant effect in favor of exercise group ($p = 0.01$)
Results - symptoms and functioning

• Results favoured the exercise group on all symptoms and functioning scales
• However, no significant between group effect was detected
Summary

• Eight weeks physical exercise improved physical performance
• Fatigue, the primary endpoint, was not improved
• No significant difference between the group in health related quality of life
• High drop out rate
  – Higher drop out rate in the exercise group primarily due to disease progression
Conclusion

- Physical exercise may prevent physical deterioration in cancer patients with incurable disease.
- Furthermore, physical exercise is an encouraging approach to be applied in future randomised trials within palliative care.