Exploring the Concept of Palliative Rehabilitation: The Active Palliative Rehabilitation in Lung Cancer (APRIL) study

Author(s): Payne C,1,3 Larkin P.J.,2,3 Mcllfratich S,1 Dunwoody L,4 Gracey J.H.1

Institute(s): 1Institute of Nursing and Health Research, University of Ulster, Jordanstown, United Kingdom, 2University College Dublin, School of Nursing, Midwifery and Health Systems, Dublin, Ireland, 3Our Lady’s Hospice and Care Services, Dublin, Ireland, 4Psychology Research Institute, University of Ulster, Coleraine, United Kingdom

Introduction
There is a growing recognition that rehabilitation is valued by people with advanced NSCLC; optimal timing and composition of rehabilitation interventions remains unclear.1 This study explores the feasibility and acceptability of palliative rehabilitation through modelling a novel intervention of physical activity and nutritional guidance for people with advanced inoperable non-small cell lung cancer (NSCLC) receiving palliative systemic therapy. As there is no agreed definition of palliative rehabilitation it is defined in this study as an educational, problem-solving process that focuses on activity limitations and aims to optimise social participation and well-being, thereby reducing stress on family and carers within the context of a life-limiting progressive illness. (adapted from Wade & de Jong, 2000)2

Objectives
1. Undertake an analysis of the concept of palliative rehabilitation
2. Develop a novel palliative rehabilitation intervention
3. Model and undertake initial feasibility testing of the novel palliative rehabilitation intervention, APRIL
4. Explore participant experience of engagement with the APRIL intervention and its impact on their quality of life and well-being
5. Examine the enablers and barriers to the delivery of APRIL from the perspective of patient participants and HCPs involved in the screening, recruitment and/or outcome measurement of participants.

Methods
A multiphase mixed methods design was employed (see Figure 1). APRIL was a 6 week individualised programme of moderate intensity cardiovascular and resistance exercise with nutritional guidance, aiming to maintain and strengthen lean mass and promote function, wellbeing and quality of life. The Transtheoretical Model of Behaviour Change (TTM) was used to guide the development and modelling of the palliative rehabilitation intervention, determine target behaviours and select appropriate behaviour change techniques. Participants completed a daily activity diary and record daily pedometer step count. Individual goals were reassessed weekly dependent on barriers and enablers to behaviour change. Outcome measurements were undertaken at baseline, on completion of the 6 week intervention (T1), and 6 weeks post intervention completion (T2)

Results
Of the 49 patients screened for the study over a ten month period, 18 were found eligible, 11 were recruited and 8 completed final assessment. Functional improvements were noted in all those who completed end of study assessments (see Table 1). Patient reported outcome measures were of limited value due to issues with response shift, floor and ceiling effects and missing data. Participants fell into 3 broad categories:
1. Exercisers: regularly engaged in recreational activity
2. Physically active: did not engage in traditional exercise but kept physically busy e. g. through household activities
3. Sedentary: did not engage in recreational exercise with fatigue often reported as barrier to daily activity.

Conclusions
This study found that a cohort of patients receiving palliative systemic treatment for advanced NSCLC were willing and able to undertake a 6 week home based individualised palliative rehabilitation behaviour change intervention consisting of physical activity and nutritional guidance. Functional improvements were noted in all those who completed the intervention. The experience of engagement in the APRIL study led HCPs to have more positive attitudes towards rehabilitation as a component of advanced cancer treatment.

Tables
Table 1
<table>
<thead>
<tr>
<th>Outcome measure</th>
<th>Exercisers</th>
<th>Physically Active</th>
<th>Sedentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFI-20 (lower figure equals less fatigue)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T0</td>
<td>100</td>
<td>66.7</td>
<td>33.3</td>
</tr>
<tr>
<td>T1</td>
<td>100</td>
<td>66.7</td>
<td>33.3</td>
</tr>
<tr>
<td>T2</td>
<td>100</td>
<td>66.7</td>
<td>33.3</td>
</tr>
</tbody>
</table>

References

The authors have no potential conflicts of interest to report.