The estimation of quality of life of the hospitalized terminally ill palliative patients with lung, breast, colon or prostate cancer.

Magdalena Jasińska¹, Michał Tracz², Aleksandra Piaskowska¹

Abstract

Introduction: The quality of life (QL) of palliative patients is used to measure the effectiveness of treatment, as well as to show the most important aims in the patient's care. The objective of the present study was the comparative estimation of quality of life of the hospitalized terminally ill palliative oncological patients using the newly developed QLQ-C15-PAL questionnaire.

Material and methods: The study was performed in the Palliative Care Unit in Hospital of Bonifrates Convent in Łódź. A group of the hospitalized terminally ill palliative patients with lung, breast, colon or prostate cancer was analyzed. The research was performed by scored assessment of QL obtained from the questionnaire patients using QLQ-C15-PAL form. Multi-item scales assessing physical and emotional functioning, single items of somatic symptoms and global quality of life estimated subjectively by patient were considered.

Results and conclusion: The overall quality of life was in correlation with type of the diagnosed carcinoma. The poor quality of life was observed especially in patients suffering from lung cancer considering both aspects: the subjectively estimated quality of life and somatic symptoms. Patients with prostate cancer characterized with better QL scales, relatively. Pain, fatigue and emotional disturbances, experienced by majority of patients, have shown to be poor predictors of QL. The above underlines the necessity of continuous improvement of all the activities in palliative care of hospitalized terminally ill palliative patients considering the control of pain as well as emotional functioning. The QLQ-C15-PAL can be used effectively in the palliative care settings.

Conclusions: Based on conducted study, it seems that psychological support of adolescents with JIA is extremely important in order to effectively cope with stress connected with chronic disease.

Keywords: quality of life, cancer, palliative care.

Introduction

Cancer among infectious and cardiovascular diseases is the most common cause of death in the world. Nowadays, the malignant carcinoma is diagnosed in 11 millions patients per year and it accounts for around 7 millions of deaths due to cancer. Moreover, it is estimated that during the next three decades approximately 11 million people will be diagnosed with cancer [1]. In Poland, cancer is the recognized cause of 20% deaths. In 2006, 91,632 deaths from carcinomas were denoted [2] and the most common ones included: lung, colon, breast and prostate cancer.

According to the World Health Organization (WHO), palliative care is the interdisciplinary specialty that aims to relieve suffering and improve the quality of care for patients with serious illness and their families [3]. It is defined as active, total care integrating symptom and pain control with spiritual, psychological, social and financial factors. In other words, palliative care is concerned primarily with managing side effects, controlling symptoms and supporting overall quality of life. It is best practiced as an interdisciplinary team model with physician, nurse, social worker, chaplain, and mental health caregivers working together to formulate and implement a comprehensive treatment plan [4, 5].

The quality of life (QL) is a multidimensional concept that focuses on how disease and its treatment affect the individual [6]. It is a multidisciplinary structure constituted by a number of factors including physical ones (i.e. induced from the illness and its treatment), psychological and emotional factors relating to among other states of anxiety and depression and social factors, finally. The quality of life of palliative patients is used to measure the effectiveness of treatment, as well as to show the most important aims in the patient’s care. It is expected that improved supportive care measures will allow patients to benefit from palliative care with reduced symptoms and better QL. In a modern oncology QL has become a parameter of equal importance to other ones characterizing the effectiveness of treatment i.e.: 5-year survival rate, disease free survival or neoplasm controlled survival. The different scales for QL measuring have been used including: specific global cancer indexes, Kamofsky index, Eastern Cooperative Oncology Group Performance Status, Specific Individual Cancer Indexes or Rotterdam Symptom Check List [7]. In our study the quality of life was assessed using newly developed [8] QLQ-C15-PAL questionnaire (Polish version) for terminally ill, palliative patients. The QLQ-C15-PAL is recommended for use in patients with advanced, incurable, and symptomatic cancer with a median life expectancy of a few months [8-9].

In contrast to the numerous QL studies using QLQ-C30 form [10], the assessment of QL using QLQ-C15-PAL is relatively lacking. To our knowledge there is no study comparing the QL of terminally ill patients with different tumor types, as well. From clinical point of view it seems to be important to assess the usefulness of QLQ-C15-PAL in such studies. The objective of the present pivotal study was the comparative analysis of quality of life of the hospitalized terminally ill palliative oncological patients with most common: lung, breast, colon or prostate cancer.

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Table 1: Demographics and clinical characteristics of the study population

<table>
<thead>
<tr>
<th>Item</th>
<th>Variable</th>
<th>Number of patients (%)</th>
<th>Number of questionnaires (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age groups</td>
<td>45-55</td>
<td>31,30</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>56-65</td>
<td>31,30</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>66-</td>
<td>37,40</td>
<td>-</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>43,75</td>
<td>-</td>
</tr>
<tr>
<td>Primary site</td>
<td>Prostate</td>
<td>31,25</td>
<td>17,14</td>
</tr>
<tr>
<td></td>
<td>Colon</td>
<td>12,50</td>
<td>17,14</td>
</tr>
<tr>
<td></td>
<td>Lung</td>
<td>31,25</td>
<td>28,58</td>
</tr>
<tr>
<td></td>
<td>Breast</td>
<td>25,00</td>
<td>37,14</td>
</tr>
<tr>
<td>Performance scale score</td>
<td>I</td>
<td>0,00</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>0,00</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>81,25</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>18,75</td>
<td>-</td>
</tr>
</tbody>
</table>

Materials and Methods

The study was performed following the protocol approved by the Bioethics Committee (40/2007 from 11.09.2007). This prospective and pivotal study was conducted in the Palliative Care Unit in Hospital of Bonifratres Convent in Lodz over three-month period. A group of the hospitalized terminally ill palliative patients were recruited for the study according to the primary site of carcinomas: non-small lung cancer, breast cancer, colon cancer or prostate cancer. The main sample consisted of 16 patients: 9 females and 7 males who completed 35 forms. The exclusion criteria involved: other diagnosed carcinomas or non-carcinoma diseases, more than one type of tumor and the age below 18.

The quality of life was estimated using QLQ-C15-PAL questionnaire recommended by The European Organization for Research and Treatment of Cancer (EORTC). The patients were asked to complete the questionnaires every week; all patients agreed to participate in the QL assessments giving their written informed consent.

The estimation of QL were performed following 15 questions of QLQ-C15-PAL formig:
1. Functional scales
1.1. Physical functioning (questions: 1-3);
1.2. Emotional functioning (questions: 13, 14)
2. Symptom scales
2.1. Pain (questions: 5, 12)
2.2. Fatigue (questions: 7, 11)
2.3. Nausea and vomiting (question: 9)
2.4. Additional symptoms (questions: 4, 6, 8, 10)
3. Global quality of life (question: 15)

For the global quality of life the 7-grade observer scale ranging from 1 (very poor) to 7 (excellent) was used. Functional scales (i.e. physical and emotional functioning) and symptom scales (fatigue, nausea and vomiting, pain, dyspnoea, insomnia, appetite loss, constipation) were 4-grade ranging from 1 (not at all) to 4 (very much). In estimation of the physical, emotional functioning and global quality, high score represented a high level of functioning; high score of the several symptoms represented a high level of symptomatology / problems.

The obtained results were analyzed using EORTC QLQ-C15-PAL Scoring Manual. The results referring to the several symptoms, physical, emotional functioning and global quality of life were calculated according to:

\[ x = \frac{(score - 1)}{R - 1} \times 100 \]

score – the patient’s answer in QLQ-C15-PAL questionnaire (values from 1 to 4 or 7)
R – range (the difference between the maximum and the minimum possible value)
x – the recalculated score (values from 0 to 100)

Statistics

The statistical analysis was performed using the Statistica version 5.0 Statsoft program. The statistical evaluation was performed using analysis of variance (ANOVA) and post-hoc comparisons were performed using Duncan test. Normal distribution of a parameter was checked by means of Kolmogorov-Smirnov test with Lilliefors correction. The homogeneity of variance was tested by Levene’s test. If data were not normally distributed or the values of variance were different, ANOVA with Kruskal-Wallis and Mann-Whitney’s U test were used.

All parameters were considered statistically significantly different if p < 0.05.

Results

The performed study involved 16 patients who completed 35 QLQ-C15-PAL questionnaires. The mean age of patients was 63 years (46-85 years) (Table 1). During the study five patients had died in the Palliative Care Unit.

The global quality of life in subjective patients’ assessment was in correlation with the type of diagnosed tumor, giving the best scores in patients with prostate cancer and the worse scores in lung cancer (Table 2).

Assessing the emotional functioning, the patients with colon and prostate cancer have displayed the better results as compared to those with lung and breast cancer. The similar dependence relating to the worsening of several symptoms including pain incidences and insomnia was observed (Table 2). All patients regardless of type of tumor were
Table 2
The scoring estimation of quality of life of patients with lung, breast, colon or prostate cancer following the questions of QLQ-C15-PAL questionnaire

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Lung cancer</th>
<th>Breast cancer</th>
<th>Colon cancer</th>
<th>Prostate cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical functioning&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Do you have any trouble taking a short walk outside of the house?</td>
<td>22.00</td>
<td>22.05</td>
<td>32.23</td>
<td>32.20</td>
</tr>
<tr>
<td></td>
<td>Do you need to stay in bed or chair during the day?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you need help with heating, dressing, washing yourself or using the toilet?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptoms&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Were you short of breath?</td>
<td>33.33</td>
<td>20.51</td>
<td>22.22</td>
<td>44.44</td>
</tr>
<tr>
<td></td>
<td>Have you had pain?</td>
<td>73.33</td>
<td>53.85</td>
<td>55.56</td>
<td>33.33</td>
</tr>
<tr>
<td></td>
<td>Have you had trouble sleeping?</td>
<td>60.00&lt;sup&gt;*&lt;/sup&gt;, &lt;sup&gt;&amp;&lt;/sup&gt;</td>
<td>20.51</td>
<td>16.67</td>
<td>27.78</td>
</tr>
<tr>
<td></td>
<td>Have you felt weak?</td>
<td>63.34</td>
<td>76.92</td>
<td>77.78</td>
<td>64.82</td>
</tr>
<tr>
<td></td>
<td>Have you lacked appetite?</td>
<td>43.33</td>
<td>61.54</td>
<td>44.44</td>
<td>38.89</td>
</tr>
<tr>
<td></td>
<td>Have you felt nauseated?</td>
<td>5.00</td>
<td>1.29</td>
<td>11.12</td>
<td>8.33</td>
</tr>
<tr>
<td></td>
<td>Have you been constipated?</td>
<td>43.33</td>
<td>43.59</td>
<td>44.44</td>
<td>55.56</td>
</tr>
<tr>
<td></td>
<td>Were you tired?</td>
<td>63.34</td>
<td>76.92</td>
<td>77.79</td>
<td>64.82</td>
</tr>
<tr>
<td></td>
<td>Did pain interfere with your daily activities?</td>
<td>60.00</td>
<td>53.85</td>
<td>55.56</td>
<td>22.22</td>
</tr>
<tr>
<td>Emotional functioning&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Did you feel tense?</td>
<td>29.18&lt;sup&gt; (&amp;, #)&lt;/sup&gt;</td>
<td>53.23&lt;sup&gt; (#)&lt;/sup&gt;</td>
<td>81.95</td>
<td>76.40</td>
</tr>
<tr>
<td></td>
<td>Did you feel depressed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global quality of life&lt;sup&gt;3&lt;/sup&gt;</td>
<td>How Could you rate your overall quality of life during the past week</td>
<td>25.00&lt;sup&gt;*&lt;/sup&gt;, &lt;sup&gt;#&lt;/sup&gt;</td>
<td>52.56</td>
<td>36.11</td>
<td>58.33</td>
</tr>
</tbody>
</table>

* - as compared to patients with breast cancer (p<0.05);
# - as compared to patients with prostate cancer (p<0.05);
& - as compared to patients with colon cancer (p<0.05);

1 High score represents a high level of functioning;
2 High score represents a high level of symptomatology / problems.

characterized with poor physical functioning and fatigue, but especially with lung and breast cancer (Table 2). However, in some patients (prostate and colon cancer) poor physical functioning has seemed to impact on the emotional state (depression, tense) in non-significant manner.

For further assessment of QL in our study the analysis comparing experienced several symptoms was performed (Ryc 1, Ryc 2). In patients with lung cancer quite good controlling was denoted in case of nausea, vomiting and dyspnoea, while pain incidences, fatigue and insomnia were the symptoms poorly affecting the QL. In breast cancer the overall QL was negatively influenced by lack of appetite, fatigue and pain. Similarly, vomiting and nausea, dyspnoea but also constipation and insomnia were the rarely observed symptoms. The similar results were denoted in patients with colon cancer. In prostate cancer group, characterized with the best overall quality of life, patients were most frequently suffered from constipation, dyspnoea and obesity. Nausea and vomiting, or insomnia were the symptoms under control.

**Discussion**

The QLQ-C15-PAL questionnaire used in the performed study is the newly developed one which is consisted of 15 items forming: multi-item scales assessing physical and emotional functioning, symptoms scales measuring fatigue, pain, nausea/vomiting, insomnia, dyspnoea, constipation and one scale estimating the global quality of life. QLQ-C15-PAL form is the shortened version of QLQ-C30 questionnaire, which is one of the most widely used instruments in oncology for assessing both physical and psychosocial symptoms and functioning of cancer patients. Advantages of QLQ-C30 include: extensive validation, availability of reference data, many published studies for comparison, or standardised scoring procedures [8]. A possible disadvantages involve its length (30 items) and some inappropriate contents when used in palliative patients. QLQ-C15-PAL used in our study as compared to QLQ-C30 form was shortened to 15 items by eliminating some questions about physical, social and cognitive functioning, financial difficulties and global health status assessment.

Fatigue and weakness are the symptoms characterizing more than 90% of terminally ill patients. Also the performed study indicated that overall quality of life was highly determined by physical functioning and fatigue, assessed as very poor in the analyzed groups of patients. Another poor predictor of QL is pain, extremely common symptom in the advanced cancer, present in approximately 70-90% of patients and impacting on quality of life, interfering with sleeping or eating. In our study the high level of discomfort due to incidences of pain interfering daily activities was denoted in the majority of patients, as well. Only prostate cancer group has not experienced such strong pain difficulties, indicating that the problem of successful pain control has still needed to be resolved. Another point are the mental symptoms depression. It accounts that about 75% of terminally ill patients have depressive symptoms and less than 25% have major depression [11]. In our study the above
Ryc 1. The estimation of quality of life including the several symptoms in patients with lung, breast, colon or prostate cancer

- as compared to (p < 0.05) – referring to patients with lung cancer
# - as compared to (p < 0.05) – referring to patients with breast cancer
& - as compared to (p < 0.05) – referring to patients with colon cancer
$ - as compared to (p < 0.05) – referring to patients with prostate cancer

1 High score represents a high level of symptomatology / problems.

Ryc 2. The functional scales (PF, EF) and global quality of life in patients with lung, breast, colon or prostate cancer

# - as compared to (p < 0.05) – referring to patients with breast cancer;
& - as compared to (p < 0.05) – referring to patients with colon cancer;
$ - as compared to (p < 0.05) – referring to patients with prostate cancer;

1 High score represents a high level of functioning.
symptoms were observed in patients with lung and breast cancer with higher level of emotional functioning in patients with colon and prostate cancer.

The overall poor quality of life was observed especially in patients suffering from lung cancer considering both aspects: the emotional functioning and somatic symptoms (i.e., pain, fatigue, insomnia). These findings are confirmed by others indicating anxiety, depression, fatigue, pain as common symptoms influencing QL in lung cancer [12-15]. Anxiety and depression have been found in many previous studies as significant predictor of global QL correlating with physical dysfunction and declining performance status [15]. Conversely in our study, the severity of other common symptoms (dyspnea), has not achieved the highest level, as compared to others [12]. Patients with prostate cancer were characterized with better QL scales, relatively. In our study the majority of patients characterized with advanced, incurable cancer, which was additionally accompanied by poor or very poor physical activity. Unfortunately, in contrast to the numerous QL studies of early-stage prostate cancer patients, the assessment of QL in advanced stage is relatively lacking [16]. There is no data comparing the quality of life in such tumors in terminally ill patients. Kurtz et al. in (2001) performed the study assessing the physical functioning and depression but not QL in elderly patients with lung, prostate, colon or breast cancer receiving anti-cancer treatments [17]. Similarly to our findings, patients with lung cancer experienced the most dramatic declines in physical functioning. In opposite to our findings, patients with breast cancer reported the smallest decline in physical functioning, which was explained by different stage of disease in the examined groups [17]. In our study terminally ill patients receiving with incurable cancer were analyzed, which may elucidate the differences. Other authors of the study assessing symptoms in non-cancer and cancer palliative patients indicated the higher severity of them in the second group [18]. In summarize, our findings suggest that the overall quality of life might correlate with type of the diagnosed carcinoma. However, further studies are warranted to confirm the above hypothesis.

The unquestionable limitation of the performed study relates to the small number of the analyzed groups, resulting from difficulties in requiring patients admitted to hospital contemporaneously. The above precluded from performing statistical analysis of the effectiveness of multidimensional activities in palliative care considering the improvement or worsening of QL during the treatment in Palliative Medicine Unit. Even though the authors of this pivotal study have tried to investigate the physical and emotional functioning of patients with most common carcinomas hospitalized in Palliative Care Unit. Further studies are warranted to investigate the importance and effectiveness of specialized palliative care on patients’ QL. From clinical point of view with increasing role of civilization diseases including cancer the continuous development of palliative medicine is undoubtedly needed.

Conclusion

The overall quality of life of terminally ill patients was in correlation with type of the diagnosed carcinoma. The poor quality of life was observed especially in patients suffering from lung cancer considering both aspects: the subjectively estimated quality of life and somatic symptoms. Patients with prostate cancer characterized with better QL scales, relatively. Pain, fatigue and emotional disturbances have shown to be poor predictors of QL experienced by majority of patients. The above underlines the necessity of continuous improvement of all the activities in palliative care of hospitalized, terminally ill palliative patients considering the control of pain as well as emotional functioning. The QLQ-C15-PAL form can be used effectively in the palliative care settings.
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