

Measurement of quality of life in carcinoid/neuroendocrine tumours

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Abstract

Quality of life is multi-dimensional, including issues relating to symptoms from the disease but also social, emotional, functional and financial domains. Debate remains on the true definition of quality of life and its measurement. Quality of life measurements are best done by patients themselves, although, in some situations a proxy such as carer or relative can be substituted. Healthcare workers can over- or underestimate overall quality of life.

Currently used devices for measuring quality of life in cancer include the European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30, which is a generic tool for all cancers and which requires the use of add-on modules for specific cancers. We are developing a separate module for carcinoid/neuroendocrine tumours, in accordance with the EORTC guidelines on module development, which will be translated into five languages and will be available for use throughout Europe.

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Background

Quality of life was originally noted to be important by Aristotle, but at that time was noted to have major variability between patients and over time. Further attempts to define quality of life initially included just functional scales (e.g. the Karnofsky performance index); subsequently, some emotional and social domains were added. However, debate remains (Fayers & Machin 2000). More recently, the concept of the difference between patients' hopes and expectations and their current state was introduced (Calman 1984), which may reduce some of the interobserver variability previously noted. However, it is important to emphasise that this must be 'health-related', to exclude the many other extraneous and non-health-related factors that may have an impact on general quality of life (Kaplan & Bush 1982, Shumaker & Naughton 1995). Other models suggest that quality of life is the impact of the disease on the person's social, family, financial and work-related domains.

Why measure quality of life?

Endpoints in cancer treatments have traditionally included survival differences as the primary measurement, followed by changes in size of tumour or, in the case of neuroendocrine

tumours, changes in hormone concentrations. In the case of carcinoid/neuroendocrine tumours, survival differences have rarely been demonstrated, partly because of lack of controlled trials, but also because of the normally prolonged survival of patients, even with metastatic disease (Shebani *et al.* 1999, Soreide *et al.* 2000, Wheeler *et al.* 2000, Nave *et al.* 2001). It would seem that quality of life measures are therefore a more logical endpoint for clinical trials of new therapies, and there is now widespread agreement within the European Organization for Research and Treatment of Cancer (EORTC) concerning this.

Another reason for measuring quality of life in clinical practice comes from recent work suggesting that performing these measurements in the clinic increases the information given to the healthcare workers and improves patient satisfaction with the interview (G Velikova, personal communication). If quality of life scoring systems can be automated, this would make measurements in routine clinic visits feasible.

Why measure quality of life in carcinoid/neuroendocrine tumours?

Measures of quality of life may be particularly important in patients with carcinoid/neuroendocrine tumours because of

their relatively young age, which makes family, social and financial issues important. This may relate to worries about children, spouse or parents at a time when the patient may be the principal earner or the principal carer in the family (Larsson *et al.* 2003). This was borne out by our phase 1 and 2 studies, in which concern about the family was the most important issue for these patients. The concern about having a ‘rare’ disease brings out concerns about quality of care and information about the disease, which would not necessarily be addressed in a clinical interview. These aspects have also featured high on the list of issues important to the patients.

Who should measure quality of life?

Logically, the patient would seem to have the most accurate view of their quality of life although, as described above, the individual variation between patients in their normal lives and at different times will be very large. In addition, there is some evidence that patients will adjust the scores to what they think the healthcare workers would like them to be. This might be reduced by a computer-based scoring system, which reduces the association of the score with the healthcare worker.

Previous quality of life scoring systems have not been ‘patient-centred’, in that the issues and questions have been formulated by healthcare workers and, even though it is the

patient giving the answers, there is a bias away from what the patient may perceive as important. Construction of questionnaires recently has given a much greater emphasis to the views of patients, with healthcare workers being secondary in this process. This is the current process adopted by the EORTC quality of life group (Sprangers *et al.* 1998).

The differences between the views of healthcare workers and patients and their carers/relatives is of interest in terms of whether anyone can act as a ‘proxy’ for patients who cannot fill in scores for themselves. Several studies have shown that relatives and carers can act as proxies for patients, with reasonable accuracy, although reduced correlation may occur for psychosocial functioning (Sprangers 2000, Sneeuw *et al.* 1997, 1998). Healthcare workers can act as proxies, but there may be differences between their views and patients’ views (Sprangers & Sneeuw 2000, Sneeuw *et al.* 2002). We have found that healthcare workers overestimate the importance of individual symptoms, but underestimate scores on emotional, social and role functions (Sneeuw *et al.* 1999, 2002). There may be further differences between nurses and doctors in the way they score quality of life – studies have shown that nurses may score anxiety/depression levels inappropriately high and doctors may score them inappropriately low (Stephens *et al.* 1997).

Methods and results of the project to date

Development of the neuroendocrine tumour module for quality of life

The module for carcinoid/neuroendocrine tumours is being developed, according to EORTC quality of life group guide-

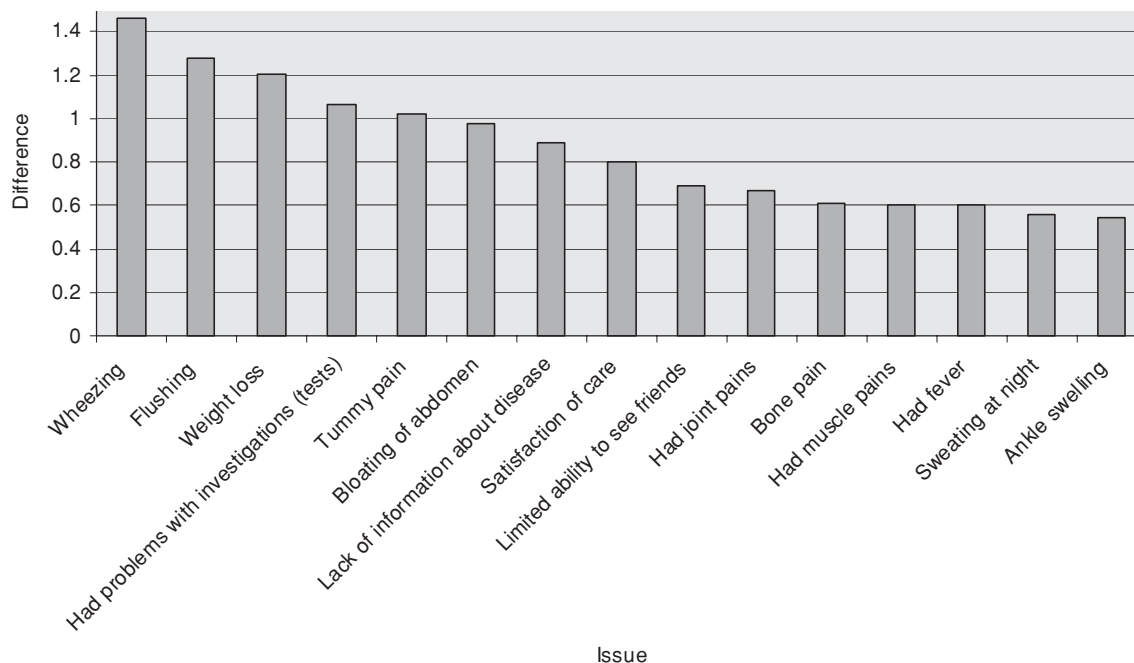


Figure 1 Differences between rating of issues for patients and healthcare workers. This shows the difference between the mean score given by patients and that given by healthcare workers. These are positive because, in all cases, scores from healthcare workers were greater than those from patients. Wheezing is thus the issue that is ‘overestimated’ most by the healthcare workers.

lines, in four phases; it will be used in addition to the QLQ-C30 (Groenvold *et al.* 1997). Phases 1 and 2 involved an in-depth search of the literature, which raised 41 issues as being important. These issues were presented to 35 patients in two countries, to determine if they were important and to assess any other issues raised. In addition, 20 healthcare workers gave their views on the importance of the various issues. The differences in mean scores between healthcare workers and patients are shown in Fig. 1. The issues were then ranked in importance to patients and healthcare workers and the lower five issues, that were clearly not important to either group, were discarded. The remaining issues were converted to questions, some of which were devised *de novo* and some of which were taken from the EORTC 'item bank', which is a database of questions that have been used in previous modules.

The issues raised in phase 1 and 2 are listed in Table 1, with those to be deleted shown in Table 2. The resulting provisional questionnaire is now known as 'NET 35' and is undergoing pre-testing as part of phase 3 of the project. The resulting questionnaire will be shortened and adjusted according to the responses from patients. The questionnaire has been translated into six languages (French, German, Spanish, Italian, Swedish and Dutch) as part of the standard translation process, and co-workers in the various countries involved are assessing the translations themselves. The translation process involves a rigorous procedure including forward and backward translations, followed by further translations if the resulting English translation is not accurate after this first step (EORTC translation procedures). The aims are to interview 120 patients with both secreting and non-secreting neuroendocrine tumours and to assess whether this questionnaire can be used for both kinds of tumour. It is possible that some of the questions relating to the more rare syndromes of hormone secretion will be contained in a subsection, which is entered only if appropriate to the patient. Some separate questions have been devised for insulinoma and gastrinoma, although it is not clear, as yet, whether these will be adequate for these much more rare tumours.

After phase 3, the questionnaire will then be ready for use in the validation process (phase 4), which will involve a large international study in six European countries, including UK. It is only at the end of this that the questionnaire may be used in clinical practice along with the QLQ-C30.

Conclusion

Managing and improving quality of life can be accurately addressed only if it is measured. Assessment of quality of life is important in patients with neuroendocrine tumours, and to date there are only limited data on measuring this. A module specifically for patients with carcinoid/neuroendocrine tumours is being developed for use in several European languages.

Table 1 Mean scores of the final list of issues raised by patients and healthcare workers

Issue	Mean score		
	Patients	Healthcare provider	Average
Flushing	2.34	3.73	3.04
Satisfaction of care	2.58	3.47	3.03
Anxiety about recurrent disease	2.46	3.2	2.83
Concern for family members	2.76	2.8	2.78
Tummy pain	2.14	3.2	2.67
Lack of information about disease	2.12	3.13	2.62
Concerned about late diagnosis	2.2	2.92	2.56
Had anxiety about dying	2.27	2.73	2.51
Wind	2.57	2.33	2.45
Anxiety about which treatment is best	2.2	2.67	2.43
Limited ability to travel	2.2	2.67	2.43
Change in sexual activity	2.17	2.55	2.36
Bloating of abdomen	1.89	2.73	2.31
Weight loss	1.6	2.93	2.26
Fear of side effects of treatment	1.91	2.6	2.26
Had muscle pains	2	2.47	2.23
Felt worried about events at the next appointment	1.94	2.5	2.22
Painful injection sites	1.94	2.47	2.21
Sweating at night	1.91	2.47	2.19
Had problems with investigations (tests)	1.6	2.75	2.17
Had joint pains	1.89	2.4	2.14
Wheezing	1.35	2.8	2.08
Limited ability to see friends	1.71	2.42	2.07
Bone pain	1.66	2.2	1.93
Had headache	1.8	2	1.9
Felt dizzy	1.71	2.07	1.89
Poor body image	1.6	2	1.8
Had fever	1.26	2.33	1.79
Skin rashes	1.6	1.93	1.76
Scarring from operations	1.63	1.8	1.71
Ankle swelling	1.37	2	1.68
Had a cough	1.49	1.87	1.68
Multiple infections	1.4	1.8	1.6
Specific symptoms			
Sweating	2.67	2.64	2.65
Fear of fits	2.33	2.91	2.62
Unable to eat	2	2.5	2.25
Vomiting	1.67	2.7	2.18
Fear of collapses	1.67	3.27	2.47
Dyspepsia (indigestion)	1.67	3.2	2.43
Worry about skin rash	1	3.1	2.05

Table 2 List of issues deleted at the end of phase 2

Issue	Mean score		
	Patients	Healthcare worker	Average
Felt dizzy	1.71	2.07	1.89
Poor body image	1.6	2	1.8
Had fever	1.26	2.33	1.79
Skin rashes	1.6	1.93	1.76
Scarring from operations	1.63	1.8	1.71
Ankle swelling	1.37	2	1.68
Had a cough	1.49	1.87	1.68
Multiple infections	1.4	1.8	1.6

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