

MEASUREMENTS TO CONTROL QUALITY OF CANCER REHABILITATION

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QUALITY ASSURANCE AND REHABILITATIVE MEASURES

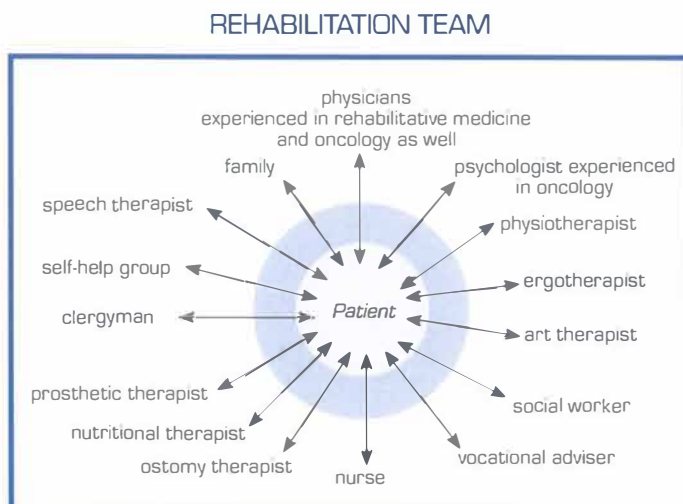
To guarantee quality of rehabilitation and palliation you have to ensure *quality of structures*, *quality of rehabilitative measures* and to evaluate *outcome of rehabilitative measures*.

As with acute therapy, certain guidelines and quality assurance procedures should also apply to rehabilitation and palliation (1-3). Unfortunately there are only few guidelines on this subject for cancer patients. There are hundreds of national and international guidelines for general care of cancer but only few of them include rehabilitational aspects. (4, 5).

Quality of structural features:

Rehabilitation in cancer patients can only be achieved through the work of a qualified rehabilitation team (figure 1). Special experience and a specialised infrastructure are essential. The rehabilitation team should be coordinated by a physician experienced in rehabilitation and palliation with demonstrable oncological knowledge. Physiotherapists play an important role in this team. The collaboration of psycho-oncologists is very useful. Social workers are essential because of the social aids that are often needed. Cooperation and exchanging information with the previously and subsequently treating physicians are important.

Figure 1



Cancer rehabilitation services include critical components of assessment, physical reconditioning, skill training, and psychosocial support. They may include vocational evaluation and counselling.

Due to the experience necessary, the rehabilitative institution should care a certain minimum of cancer patients per year. (5, 1).

Quality of medical and therapeutic processes

Verifiability of the quality of rehabilitation and palliative therapies must be guaranteed. An assessment of rehabilitative needs is essential. All members of the cancer rehabilitation team should participate in the patient's assessment. The initial evaluation should include the medical history; diagnostic tests; current symptoms and complaints, physical assessment, psychologic, social, or vocational needs, nutritional status, exercise tolerance, determination of educational needs, the patient's ability to carry out activities of daily living and patient's interests and compliance.

In rehabilitation and palliation it is not the rehabilitation team alone, but also the patient who takes on the task of assessing many treatment measures although expectations of a successful treatment are often very different in patients. Many patients accept rehabilitative and palliative therapies for reasons that are possibly quite different from those of the physicians who recommend it. Comparisons with patient-reported symptoms from the quality of life questionnaire have shown, that physicians fail to report approximately one half of the symptoms identified by the quality of life questionnaire as adverse events, and the quality of life questionnaires did not detect approximately one half of the symptoms (6).

The rehabilitation therapeutic program must be tailored to meet the needs of the individual patient, addressing age-specific and cultural variables, and should contain patient-determined goals, as well as goals established by the individual team.

Outcome evaluation of rehabilitative measures

Quality of life questionnaires of the European Organization for Research and treatment of cancer (such as EORTC-

BR23, EORTC QLQ C-30 and the functional assessment of cancer therapy (Fact-B) can be used. Both are internationally validated questionnaires and have been used on multiple studies. They are composed of multi-item scales and yes/no questions assessing physical, role functioning, cognitive, emotional, and social effects.

The evaluation of rehabilitative measures in cancer patients is directed not at survival time, but rather at quality of life criteria. This involves primarily subjective and objective parameters such as improvement of pain, mobility, physical fitness, overcoming fears etc (for example table for breast cancer patients). In general these parameters are not found in outcome assessment and evaluation of primary therapy (response, remission and length of remission).

The evaluation of rehabilitative and supportive measures is much more difficult than checking the outcome of intervention procedures generally used in potentially curative follow-up care (length of recurrence-free period, detection of early recurrence)

Outcome assessment in most clinical trials is affected by a purely medical understanding of the disease. This is reflected in the predominant use of oncological symptoms as the content of outcome measures. The assessment of other health aspects like psychic symptoms, interpersonal or social consequences of the disease, seems to be similarly, if not more, important and should be considered in quality control of rehabilitation.

Measurements of quality of life

Studies of quality of life in cancer patients have been performed mainly in therapeutic trials in order to assess the disease and treatment of specific symptoms. The studies mainly used performance status as a proxy regarding quality of life, even though there is only a weak association between the performance status such as the Karnofsky Performance scale and the quality of life as measured by the EORTC QLQ-C30 (7). Palliation of symptoms, psychosocial interventions, and understanding patient's feelings and concerns all contribute to improving quality of life in cancer patients.

Activities of daily life play an important role in rehabilitation. Widely used measures to assess activities of daily life are the functional independence measure or the Barthel Index (8).

Different outcome scales in palliative care of cancer patients have been developed (9, 10). The scales cover physical and psychic symptoms, spiritual considerations, practical concerns, emotional concerns of the patient and family, and psychosocial needs of the patient and family. The Palliative Care Outcome Scale (POS) is a multidimensional instrument covering these physical, psychosocial, spiritual, organizational, and practical concerns.

Basically, improvement in quality of life aimed at in rehabilitation is achieved when less nursing care is necessary ("rehabilitation to combat the need of care"), when the

Table 1: Possible therapeutic aims and their effectiveness parameters in the rehabilitation and palliation, of pancreatic carcinoma patients (Delbrück 2007)

Re Reduction of disorders resulting from surgery/ chemotherapy/ radiation therapy	WHO Toxicity scale, CTC classification, assessment of organ function, Questionnaire : FLIC, SIRO
Pain relief	Pain diary, reduction of analgesic drugs, pain sensitivity scales, questionnaires: PDI, EORTC QLQ- C30, SE36, SDS, RSCL
Improvement of nutritional status	Weighting, determination of total protein, albumin concentration, biometric impedance analysis, FACT-CT
Improvement of metabolic status in diabetics	Blood sugar daily profiles, HbA1, diabetes journal
Clarification and alleviation of malassimilation / maldigestion symptoms	Stool fats / stool weight
Improvement of physical fitness	Ergometry, Karnofsky index, WHO and EORTC performance status, walking distances, muscle force (hand held dynamometry), exercise capacity (symptom limited bicycle ergometry, vigorimeter; QLQ-C30 , questionnaires, FACT-Ct, FACT-G, FACT-An, SIP, SF-36, Nottingham Health profile
Family member counselling	Questionnaires
Information on illness, follow-up care, signs of recurrence, therapy in case of recurrence, behavior-influencing illness,	Questionnaires, tests
Reduction of anxiety, depression	Rating scales, questionnaires : STAI, Poms, BDI, BSI, HADS-D, PAF
Coping with illness	Questionnaires FKV, FKV-LIS, BEFO, TSK, FIBECK
Clarification and improvement of vocational fitness, return to work	Resumption of vocation, length of time of inability to work
Reduction of necessity of nursing care	Questionnaires: Barthel index, FIM, ADL
Relief of physical and psychological symptoms in the palliative situation	Questionnaire: POS

Table 2: Possible therapeutic aims and their effectiveness parameters in the rehabilitation of breast cancer patients (Delbrück 2007)

Therapy goal	Parameter of effectiveness
Reduction and avoidance of lymphedema	Volume measurements, reduction of symptoms, improvement of ADL
Relief of physical and psychic symptoms in the palliative situation	Questionnaires: POS
Pain relief	Pain diary, reduction of analgesic drugs, pain sensitivity scales, questionnaires: PDI, BPI, EORTC QLQ-C-30, SE 36, SDS, RSCL
Improvement of shoulder-arm mobility	Measurements of abduction/adduction
Reduction of disorders resulting from surgery, chemotherapy, radiotherapy	WHO- toxicity scale, CTC-classification, FACT, CIRS-G, assessment of organ functions,
Improvement of physical fitness	Ergometry, Karnofsky Status, WHO- and ECOG-Performance Status, EORTC-Performance-Status, walking distance, shuttle walking test, muscle force (hand-held dynamometry), exercise capacity (symptom limited, bicycle ergometry, muscle force (hand held dynamometry. Questionnaires: ADL, IADL, FACT, FACT-An, Nottingham health profile, ESAS, (EORTC) LC-13, LC-13, LCSS, QLQ-C- 30, FLIC
Reduction of complaints resulting from hormonal therapy	Reduction of symptoms (e.g. hot flashes, insomnia)
Informations on curative follow up and rehabilitation/palliative measures, counselling for family members	Questionnaires, tests
Reduction of anxiety, depression, fatigue	Rating scales, questionnaires: POMS, STAI, BDI, BFI, BSI, HADS-D, GDS,
Coping with illness	Questionnaires: (FKV, FKV-LIS, BEFO, TSK, FIBECK)
Clarification and improvement of vocational fitness	Resumption of work, length of period of inability to work, FLI-C
Reduction of necessity of nursing care	Reduction of required level of nursing. Questionnaires : Barthel index, Questionnaires: FIM, ADL, IADL, CIRS-G, FLIC-C

Abbreviations of questionnaires:

ADL = Activities of daily life

BFI = Brief Fatigue inventory

BPI= Brief Pain Inventory

CCM = Cancer Care Monitor

CIRS-G = cumulative Illness Rating Scale Geriatric

DDC = Daily Diary Card

EORTC-QLQ = European Organization for Research and Treatment of Cancer Quality of Life

ECOG = European Cooperative Oncology Group-Scale

ESAS = Edmonton Assessment Scale

FIM = functional independence measure

FLIC = Functional Living Index-Cancer

GDS = Geriatric Depression Scale

HADS-D = Hospital Anxiety and Depression Scale

IADL = Instrumental Activity Daily Living

KPS = Karnofsky Performance Scale

MFI = Multidimensional fatigue inventory

PDI = Pain disability index

POMS = Profile of Mood Status

POS = Palliative Care Outcome Scale

Fact-An = functional assessment of cancer therapy anaemia (Cella 1997)

FLIC = Functional living index

PDI = Pain Disability Index

RSCL = Rotterdam-Symptom Check list

SDS = Symptom distress scale

SF-36 = Medical outcome study short form-36

patient can be vocationally reintegrated ("rehabilitation to combat early retirement"), when he/she feels secure ("rehabilitation to combat resignation and depression") and when the patient's physical disabilities and functional limitations are at a minimum ("rehabilitation to combat disability").

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