

# [Pulmonary rehabilitation and qol in lung cancer patients](https://assignbuster.com/pulmonary-rehabilitation-and-qol-in-lung-cancer-patients/)

PULMONARY REHABILITATION AND QUALITY OF LIFE IN LUNG CANCER PATIENTS

(Abstract): The quality of life in patients with lung cancer is determined both by factors related to the patient (stage of disease, comorbidities) and the factors related to treatment (surgery, chemotherapy, radiotherapy). Since the impact of treatment on survival of patients with lung canceris quite low, quality of life is a goal increasingly important. Until now, quality oflife was properly assessed in few studies and the results can be influenced by the use of non- validated methods. The most usedtools adapted for measuring the quality of life for lung cancer are the European Organization for Research and Treatment of Cancer (EORTC) LC-13 questionnaire, the Functional Assessment of Cancer Therapy (FACT-L) questionnaire and the Lung Cancer Symptom Scale (LCSS).

Keywords: LUNG CANCER, QUALITY OF LIFE, REHABILITATION.

Lung cancer is one of the most common types of cancer, with a 5-year survival rate of approximately 15 %. Given the evolution of long asymptomatic lung cancer in contrast to other tumor types, it is often diagnosed at an advanced stage. Symptoms include cough, hemoptysis, dyspnea, chest pain, weakness, loss of appetite. Therefore, treatment goals for these patients are relief of symptoms and increased overall survival [1]. Therapies that improve the survival rate are often accompanied by severe side effects. Due to the increasing number of alternative lines of therapy and treatment, the decrease differences in the clinical effectiveness and drug development costs, the importance of estimating the parameters of quality of life (QOL) increases both health and economic reasons. So little time, the inclusion of these parameters in lung cancer clinical trials was generally neglected [1-3].

During 2001-2011, there were 43 studies conducted to measure health-related quality of life (HRQoL) of patients with lung cancer, 27 of which had as main objective HRQoL.

Most publicationsillustrate the results of phase III clinical trials, 38 included patients with locally advanced non-small cell lung cancer (NSCLC), especially in stage III/IV, two studies included patients with small cell lung cancer (SCLC) in all stages and three studies included both patients with NSCLC and SCLC.

Most studies have investigated the impact of platinum based drug combinations, 6 studies have investigated the effect of gefitinib and 2 studies concerns of erlotinib.

Between the questionnaires used to assess quality of life in patients with lung cancer are mentioned questionnaire of the European Organization for Research and Treatment of Cancer (EORTC QLQ – C30) questionnaire, Functional Assessment of Cancer Therapy-General (FACT – G) questionnaire, FACT-L (Lung) questionnaire, Lung Cancer Symptom Scale (LCSS), Anxiety and Depression Scale (HADS), Brief Pain Index (BPI).

The most commonly used is the EORTC QLQ-C30 contains 30 criteria, available in 60 languages [4]. FACT-G questionnaire containing 27 physical elements, emotional, social, functional, available in more than 50 languages [5] and the FACT-L is suitable for lung cancer and contains 37 items assessing quality of life [6].

Due to the homogeneity characteristics of the patients and treatment regimens, it is not possible to compare all of the studies on the HRQoL.

Most studies include comparing different chemotherapy regimens did not show significant differences in HRQoL between treatment arms [7, 8, 9, 10, 11, 12, 13, 14].

Another group of studies report cautious assumptions to improve HRQoL [15, 16, 17].

Only Belani et al. and Reck et al. indicates HRQoL superiority of paclitaxel or docetaxel compared with vincristine or vinorelbine/cisplatin [18, 19].

Regarding EGFR inhibitors, Gelibter et al., Mu et al., And Zhang et al. been shown to improve HRQoL in patients with highly advanced NSCLC treated with gefitinib [20, 21, 22]. Cella et al. and Natale et al. reported improvements in HRQoL after administration of gefitinib and correlate these improvements with tumor response [23, 24].

Regarding erlotinib, Lilenbaum et al. could not demonstrate significant improvement in progression-free survival, median survival and HRQoL compared to standard chemotherapy regimen [25].

Bezjak et al. HRQoL showed significant improvement, where erlotinib is administered in the second line of treatment [26].

LUX- Lung 3 study conducted on a population of patients with advanced NSCLC with EGFR mutation positive, showed an unprecedented improvement in cancer-related symptoms and increase quality of life when treated first line with afatinib, an irreversible inhibitor of the ErbB receptor family, compared to chemotherapy with pemetrexed and cisplatin, considered the standard of care in this population of patients with NSCLC [27].

Lung cancer or lung metastases often have symptoms for which palliative radiotherapy is effective [28, 29] and improves or maintains quality of life, for about one-third of affected patients [30].

There are forty-three studies that are assessed in at least one arm of the study, use of palliative thoracic radiotherapy that evaluated QOL or symptoms palliation a primary or secondary. Thirty studies have evaluated the treatment of patients with NSCLC. Four studies involved patients who were treated with endobronchial brachytherapy alone or in combination with external radiotherapy. Other nine studies have evaluated the use of palliative radiotherapy in patients with lung cancer other than NSCLC histological type.

Clinical trials that compared different regimens of palliative radiotherapy fractionation showed improved quality of life and survival in patients with good performance status who received high doses of radiation (TD = 30Gy/10fractions/3Gy/fraction) compared with lower doses (TD = 20Gy/5fractions/4Gy/fraction, 17Gy/2fractions, 10Gy/1fraction), which are mainly used in patients with reduced performance status and may be interspersed between the series of chemotherapy without causing delay in chemotherapy administration [31, 32].

Impact of new radiotherapy techniques (IMRT – intensity modulated radiotherapy, IGRT – guided radiotherapy imaging) and PET -CT imaging integration in the palliative treatment of patients with pulmonary cancer is not clearly defined.

Relative to the palliative role of endobronchial brachytherapy, recent analysis of 13 clinical trials concluded that external radiotherapy is superior endobronchial brachytherapy and brachytherapy added to external radiation has no advantages over external radiotherapy alone [33].

So far, not demonstrated an advantage of concomitant radio – chemotherapy to sequential administration for symptoms palliation in patients with lung cancer [34, 35, 36, 37].

First programs of pulmonary rehabilitation have been developed in The United States of America in the 1970’s . Since then, several specialists tried to define better the term of “ pulmonary rehabilitation “:

‘’Pulmonary rehabilitation is a multi-dimensional continuum of services directed to

persons with pulmonary disease and their families, usually by an interdisciplinary team of specialists, with the goal of achieving and maintaining the individual’s maximum level of independence and functioning within the community’’(1)

“ Pulmonary rehabilitation may be defined as an art of medical practice wherein an

individually tailored, multidisciplinary program is formulated which through accurate diagnosis, therapy, emotional support, and education, stabilizes or reverses both the physio and psychopathology of pulmonary diseases and attempts to return the patients to the highest possible functional capacity allowed by his pulmonary handicap and overall life situation.”(2)

The definition given by the American College of Chest Physicians (ACCP), the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), the American Thoracic Society (ATS) and European Respiratory Society (ERS) –

“ an evidence-based, multi-disciplinary, and comprehensive intervention for patients with chronic respiratory diseases who are symptomatic and often have decreased daily life activities. Integrated into the individualized treatment of the patient, pulmonary rehabilitation is designed to reduce symptoms, optimize functional status, increase participation, and reduce health care costs through stabilizing or reversing systemic manifestations of the disease.”(3)

The most recent definition “ Pulmonary rehabilitation is a comprehensive intervention based on a thorough patient assessment followed by patient-tailored therapies which include, but are not limited to, exercise training, education, and behavior change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviors.”(4)

To understand better the importance of these rehabilitation programs, here are some statements of some patients with pulmonary diseases:

-“ It can be extremely upsetting because I can’t find the breath of life that we all need.“

-“ My legs ached, my shoulders ached, my arms ached . I couldn’t continue with my hobbies. I lost hope completely. I literally wanted to die.”

-“ This is very depressing ; this makes me very anxious!“

Over time pulmonary rehabilitation has been an important part in the management of COPD and of other chronic lung diseases.

Rehabilitation in lung cancer has not been studied so extensively as the rehabilitation in COPD but the results from various studies indicate clearly the importance of pre and post surgery rehabilitation.

Patients who had or have to go through a lung cancer surgery may have breathlessness, pain, fatigue, anxiety, poor physical condition and low quality of life. For oncology patients, pulmonary rehabilitation is not just about how the patient learns to breathe properly and respiratory muscle training, but a multitude of factors that together help the patient to support more easily the surgery or chemo-radiotherapy , to have an early recovery and to increase quality of life.

Judging by the motto” There are no diseases, but sick people”, pulmonary rehabilitation for patients with lung cancer , also has to be personalized . It may be regarded as the tailoring of the rehabilitation programme to the patient’s needs and characteristics and also, to the evolution of his oncological disease.

How pulmonary rehabilitation helps people with lung cancer?

-helps the patient to carry out his daily activities

-increases the quality of life – helps to improve general health -decrease the number of postsurgical complications -hastens the postoperative recovery

-prevents respiratory tract infections

Pulmonary rehabilitation is a complex process and may include the following: – Breathing techniques (diaphragmatic breathing, pursed-lip breathing) – Energy conservation techniques – Aerobic (to increase pulmonary capacity) – Respiratory muscle strengthening techniques – Nutrition tips – Counseling and relaxation techniques

– Group therapy

Before establishing a pulmonary rehabilitation program must be identified that baseline – what the patient can do easily, what kind of daily activities is able to do and what kind of activities are done with difficulty.

Pulmonary rehabilitation can and pre and / or post surgical. Rehabilitation period is decided by an interdisciplinary team consisting of pneumologist, oncologist and thoracic surgeon. Preoperative rehabilitation can decrease the number of postoperative complications, speed recovery and may also have an economic impact, reducing the number of days of hospitalization, postoperative morbidity.

Studies have shown that postoperative rehabilitation is good to be started after about 3 or 4 months after surgery.

The minimum duration of a pulmonary rehabilitation exercise program has not yet been widely established.

Pulmonary rehabilitation should be taken into consideration for all the patients with lung cancer no matter what stage . Rehabilitation is beneficial for all stages of lung cancer, even for inoperable cases. Moreover, we could say that pulmonary rehabilitation is an essential aspect of the palliative measures in patients with lung cancer.

Pulmonary rehabilitation also has it’s riscks, for example, it can cause arrhythmias or cardiac arrest in patients with cardiac pathology, it can cause bone lessions or muscle injuries.

Education The patient must learn what he has to do to take care of himself better and to maximize quality of life. The most important thing is that the patient must practice and continue for a lifetime everything he learnt during the medical rehabilitation program conducted at the hospital.

Nutrition is an important aspect of the rehabilitation programs because, in most cases, lung cancer patients already have a poor nutritional status which can be caused by the consumptive syndrome, the treatment or because of the depressive syndrome that is often encountered in patients with cancer. The effects of malnutrition in patients with lung cancer: – increased fatigue

– vulnerability to infections -decreases compliance to treatment -delay recovery -affects quality of life

Recommendations on nutrition in lung cancer:

-eat frequent small portions

-eat high-protein and high-calorie foods

-avoid fast food and carbonated drinks

-do not take vitamins without doctor recommendation

– use spices to get a better taste of the food

-the meat will be cooked at high temperatures

-no fried foods

-cooking will be done in stringent conditions of cleanliness

-adequate hydration, at least 2 liters of fluid per day

Counseling Finding the diagnosis of malignancy, the disease and the multitude of investigations and treatments applied to patients with cancer are sources of psycho-emotional stress. Through psychological counseling, the patient finds new ways to adopt a lifestyle as healthy as it can and receives the necessary power to replace negative emotions.. Oncology patients are special patients that require special attention and support from the whole multidisciplinary team and also from their families.

In the cases where palliative care is the only solution, the pulmonary rehabilitation team must prepare the patient for a dignified end.

Pulmonary rehab is a chance for people with lung cancer to get help, to have a better quality life, to understand better their disease and to feel much confident.