

Pulmonary Disorders 2017: Pulmonary rehabilitation and the cancer setting: Is it beneficial? Is it safe?

Vickie R Shannon

The University of Texas MD Anderson Cancer Center, USA

Cancer is the name given to a collection of related diseases. In all types of cancer, some cells in the body start dividing without stopping and spread to surrounding tissue. Cancer can start almost anywhere in the human body, which is made up of billions of cells. Normally, human cells grow and divide to form new cells when the body needs them. As cells age or are damaged, they die and new cells take their place. When cancer does grow, however, this orderly process breaks down. As cells become more and more abnormal, old or damaged cells survive when they should die, and new cells form when they are not needed. These extra cells can divide without stopping and form growths called tumors. Many cancers form solid tumors, which are lumps of tissue. Cancers of the blood, such as leukemia, usually do not form solid tumors. Cancerous tumors are malignant, which means they can spread or invade nearby tissue. Also, as these tumors grow, some cancer cells can break off and travel to distant places in the body through the blood or lymphatic system and form new tumors far from the original tumor.

Statement of the Problem:

Evidence-based support for pulmonary rehabilitation (PR) in the management of patients with chronic lung disease has grown significantly. A beneficial role has been widely demonstrated in patients with chronic obstructive pulmonary disease (COPD) and patients with pulmonary emphysema enrolled for lung volume reduction surgery. In these settings, significant reductions in dyspnea and improvements in physical performance and health-related quality of life have been demonstrated following a PR program. PR is often advocated as an adjunct to cancer patients. Small recent studies suggest that RA may have a favorable impact on the management of lung cancer by improving a variety of clinically significant outcomes, such as performance status, chemotherapy-related

fatigue, oxygen uptake, exercise tolerance and health-related quality of life. However, the true benefits and safety of this intervention in the context of cancer remain in question.

Purpose of the Study:

To determine the role and safety of RP in the improvement of chronic symptoms of dyspnea, fatigue and / or exercise intolerance in patients with hematologic and solid malignancies.

Methods:

Patients with active hematologic or solid tumors who were referred to the pulmonary service for evaluation of chronic dyspnea and / or decreased functional status were placed in our outpatient PR program and studied prospectively. Baseline clinical assessment and functional status including 6 minute walking distance (6 MWD), cardiopulmonary stress tests (CPET), and self-reports of perceived exertion and dyspnea were used to develop an individualized exercise prescription and public relations program for each patient. All studies were repeated at the end of the program. The 12-week program included progressive aerobic and resistance training sessions three times per week and weekly educational and psychosocial training components.

Results: Participation in the RP program significantly increased 6 MWD mean distance (23%, $P < 0.05$) and oxygen uptake, as assessed by VO_2 (18.6%, $P < 0.05$). Dyspnea and perceived exertion scores were similar before and after rehabilitation despite greater physiological work after rehabilitation. Significant improvements were observed in patients with liquid and solid malignant tumors. No adverse events occurred during the study. Conclusion: Pulmonary rehabilitation appears safe and promising as a therapeutic intervention in the management of a heterogeneous population of oncology patients presenting debilitating pulmonary symptoms.