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

Statement of the Problem: Evidence-based support for pulmonary rehabilitation (PR) in the management of patients with chronic lung disease has grown tremendously. A beneficial role has been largely shown among patients with chronic obstructive pulmonary disease (COPD) and patients with pulmonary emphysema enlisted for lung volume reduction surgery. In these settings, significant reductions in dyspnea and improvements in exercise performance and health-related quality of life have been demonstrated following a program of PR. PR is often advocated as an adjunctive intervention in patients with cancer. Recent small studies suggest that PR may favorably impact lung cancer management by improving a variety of clinically meaningful outcomes, such as performance status, chemotherapy-related fatigue, oxygen consumption, exercise tolerance, and health-related quality of life. However, the true benefits and safety of this intervention in the cancer setting remain in question.

Purpose of the Study: To determine the role and safety of PR in improving chronic symptoms of dyspnea, fatigue and/or exercise intolerance in patients with hematologic and solid malignancies.

Methods: Patients with active hematologic or solid malignancies 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 prospectively studied. Baseline clinical evaluation and functional status, including 6-minute walk distance (6 MWD), cardiopulmonary exercise testing (CPET) and self-reports of perceived exertion and dyspnea were used to develop an individualized exercise prescription and PR program for each patient. All studies were repeated upon program completion. The 12-week program encompassed thrice weekly progressive aerobic and resistance training sessions and weekly didactic educational and psychosocial components.

Results: PR program participation significantly increased the mean 6MWD distance (23%, P<.05) and oxygen consumption, as assessed by VO_2 (18.6%, P<0.05). Dyspnea and perceived exertion scores were similar at pre- and post-rehabilitation despite greater post-rehabilitation physiologic work. Significant improvements were seen among patients with liquid and solid malignancies. No adverse events occurred during the study.

Conclusion: Pulmonary rehabilitation appears safe and shows promise as a therapeutic intervention in the management of a heterogeneous population of oncology patients with debilitating pulmonary symptoms.

Biography

Vickie R Shannon holds MD from Washington University and is triple certified by the American Board of Internal Medicine in Internal Medicine, Pulmonology and Critical Care. Her research and clinical works in the area of pulmonary rehabilitation in cancer patients has made her a much-sought-after speaker and mentor to students interested in pursuing careers in medicine. In 2006, she launched an innovative pulmonary rehabilitation program at MD Anderson Cancer Center for cancer patients who suffer from compromised pulmonary function and performance status. Her primary clinical interests include chemotherapy and radiation-induced lung injury, lung injury in the immunocompromised host and pulmonary rehabilitation.

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