Service Priorities and Programmes

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Comparison of Rehabilitation Outcomes for Patients with Non-small Cell Lung Cancer after Thoracoscopic Lobectomy and Open Lobectomy: A Retrospective Study

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Introduction

Lung Cancer is the major cause of cancer death in Hong Kong. Annually, there are about 230 patients with the diagnosis of non-small cell lung cancer (NSCLC) undergo pulmonary lobectomy in Queen Elizabeth Hospital. The surgical approaches are usually by means of video-assisted thoracoscopic surgery (VATS) or open thoracotomy. The different operative procedures together with the removal of lung tissue confer different degree of impairment in post-operative ventilatory function, exercise tolerance and quality of life (QoL) of the patients.

Objectives

To compare the lung function, exercise tolerance and QoL for patients with NSCLC who underwent lobectomy by VATS or thoracotomy.

Methodology

Patients after pulmonary lobectomy were recruited into a Rehabilitation Exercise Program. The lung function (FEV1 & FVC), exercise tolerance (6-minute walk test, stair walking), and QoL (Medical Outcome Study Short Form 36) were assessed at the beginning of the exercise program, after the exercise program as well as 6 months after the operation. Repeated measures of General Linear Measure (GLM) were employed to test the significant difference of the outcome measures across the time periods. Independent t-test was employed to test the between group difference of the rehabilitation outcomes for the 2 different surgical procedures.

Result

Between January 2010 and December 2012, a total of 153 patients with a diagnosis of NSCLC with lobectomy were recruited into the exercise program after surgery. 70 patients underwent VATS lobectomy and 83 patients underwent thoracotomy lobectomy. Patients showed significant improvement in lung function, exercise tolerance and QoL after exercise training ($p<0.01$). Besides, the VATS group showed

13.4% higher in FEV1 and 15% higher in FVC as compared with the open thoracotomy group after the operation ($p<0.01$). Further, the lung function of the VATS group was still significantly higher than the thoracotomy group up to 6 months after the operation ($p<0.05$). However, the improvement in exercise tolerance and QoL were similar as compared the 2 groups of patients with different surgical procedures. Conclusions: To sum up, VATS lobectomy was comparable with thoracotomy lobectomy in post-operative rehabilitation outcomes for the treatment of non-metastatic NSCLC. In fact, patients with VATS lobectomy appeared to have a faster recovery in lung function than patients with open thoracotomy.