Pre-operative physiotherapy reduces post-operative complications in patients with multiple co-morbidities receiving sleeve gastrectomy.

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**Introduction**
Post-operative complication poses additional burden on medical resources. Post-operative complication is a key performance indicator in medical service. Local evidence on the impact of pre-operative physiotherapy training on post-operative outcome is lacking.

**Objectives**
The purpose of the present study is to investigate the effectiveness of pre-operative physiotherapy in minimizing post-operative complication for morbidly obese patients after sleeve gastrectomy.

**Methodology**
Between 2011 and 2014, a program of aerobic training and advice was offered to eligible patients before sleeve gastrectomy. Their exercise tolerance in term of Metabolic Equivalent, was measured by upper limb exercise stress test using upper limb ergometer. Retrospective review of the prevalence of post-operative complications was analyzed with the change of exercise tolerance after the aerobic training.

**Result**
Thirty-six patients with multiple co-morbidities and undergone sleeve gastrectomy were reviewed. Twelve of whom were male and the median age was 43 (range 23-53),
twenty-four were female and the median age was 40 (range 22-61). 22 out of 36 (61%) patients demonstrated improvement of MET after aerobic training and advice on the measure. 13 out of 36 (36%) patients recorded post-operative incidences (fever, abrupt blood pressure, chest pain, atrial fibrillation, deep vein thrombosis). The latest pre-operative level of upper limb exercise tolerance after training and advice was 2 Metabolic Equivalent (MET), 3MET and 4MET. The post-operative complication incidences in each post-training group were as follows: 2MET (n=8; 75%), 3MET (n=17, 29.4%), 4MET (n=11, 18%). The results demonstrated the improvement in MET has reduced the occurrences of post-operative complication. 22 out of 36 (61%) patients demonstrated improvement of MET after aerobic training and advice. Using Chi-Square test (2x2 table), the occurrences of post-operative complication was reduced with an increase in MET level, p-value= 0.029 <0.05. In sub-group analysis, the improvement demonstrated in the beginning of 2MET group and the 3MET group were both successful in the reduction of the occurrence of post-operative complication using Chi-Square (2x2 table), the p-value= 0.032 and 0.0083 respectively. Pre-operative physiotherapy training enhances physical strength of patients and reduces the occurrences of post-operative complication significantly in morbidly obese patients with multiple co-morbidities contemplating laparoscopic sleeve gastrectomy.