

Abstract

Obesity is an important problem that affected on respiratory system. The purpose of this study was to compare the spirometric pulmonary function test and respiratory muscle strength between group of overweight, class I and II obesity in Chaing rai. One hundred and twenty volunteers were divided into 3 groups of 40 overweight, 40 class I obesity, and 40 class II obesity, and each group consisted of 20 males and 20 females. Age and height were not statistically different in all groups but weight, body mass index, and percentage of body fat were statistically different in all groups ($p < 0.05$). All subjects had to perform spirometry test and maximal inspiratory pressure (PI max) and maximal expiratory pressure (PE max), and select the highest value for analysis. Results showed that class II obesity group achieved the least readings of FVC, FEV₁, and FEV₁/ FVC ratio compare with overweight and class I obesity ($p < 0.05$). PI max and PE max in obesity class 2 was lower than overweight and class I obesity (PI max; 79.15 ± 21.04 , 69.68 ± 15.12 and 67.28 ± 11.81 cmH₂O) (PE max; 74.03 ± 11.48 , 57.95 ± 12.66 and 54.55 ± 17.06 cmH₂O) ($p < 0.05$). In conclusion, the pulmonary function test and respiratory muscle strength in class II obesity was lower than overweight and class I obesity. Also, High body mass index in people may also lead to a decrease in the pulmonary function and respiratory muscle strength.

Keywords: Obesity, Pulmonary function, Respiratory muscle strength