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Relationship Between Respiratory Function and Serum IL-6 Level in Non-obese and Obese Male Adult Subjects

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Objective: The present study aimed to investigate the relationship between respiratory function and serum interleukin-6 level in non-obese and obese adult male subjects.
Material and Methods: A community-based cross-sectional comparative study was carried out in 30 non-obese and 71 obese male adult subjects of age 18– 45 years who lived in Magway Township. Respiratory function was measured with Spirobank II spirometer and serum IL-6 level was determined by enzyme-linked immunosorbent assay. Comparisons were done by Mann-Whitney U test and Spearman's rank correlation was used for correlation analysis by using SPSS.
Results: The percentage of predicted value of all respiratory function parameters of obese group was significantly lower than that of non-obese group ($p < 0.05$). There was a significant difference of serum IL-6 level between non-obese group and obese group [median and interquartile range: 10(10-11) pg/mL vs 38(20-54) pg/mL, $p < 0.05$]. There was a significant positive correlation between serum IL-6 level and anthropometric measurements such as BMI ($r = 0.519$, $n = 101$, $p < 0.001$) as well as WC ($r = 0.547$, $n = 101$, $p < 0.001$). All respiratory function parameters were significantly and negatively correlated with anthropometric measurements (BMI and WC) as well as serum IL-6 level. Anthropometric parameters are more significantly and strongly correlated with respiratory function parameters than proinflammatory cytokine, serum IL-6.
Conclusion: It can be concluded that mechanical effect of obesity is the principle determinant of respiratory function impairment and inflammatory effect of obesity, was partly contributed to respiratory function impairment associated with obesity.