European Respiratory Society
Annual Congress 2012

Abstract Number: 514

Publication Number: P861

Abstract Group: 4.1. Clinical physiology and Exercise

Keyword 1: Physiology **Keyword 2:** Chronic disease **Keyword 3:** Physiological diagnostic services

Title: Study on mouth occlusion pressure in normal subjects and patients with obstructive or restrictive lung diseases

Prof. HongLyeol 3542 Lee hllee@inha.ac.kr MD [1], Prof. HaeSung 3543 Nam hsnam@inha.ac.kr MD [1], Prof. JaeHwa 3544 Cho cho.jaehwa@inha.ac.kr MD [1] and Prof. JeongSeon 3545 Ryu jsryu@inha.ac.kr MD [1]. [1] Department of Internal Medicine, Inha University College of Medicine, Incheon, Korea, 400-711 .

Body: Mouth occlusion pressure ($P_{0.1}$) is the mouth pressure developed against a complete occlusion at 0.1 second after beginning of inspiration from FRC. Consciousness, autogenous reflexes and various lung mechanics do not affect it. We did this study in sequence of arterial blood gas examination, flow-volume curve, body plethysmography, diffusion capacity and measurement of $P_{0.1}$. We divided the subjects into 4 groups such as normal control groups below 35 and above 50 years old, and the patient groups of obstructive and restrictive lung diseases. We measured $P_{0.1}$ during breathing of the ambient air and, again during 6% CO_2-rebreathing with simultaneous measurement of ventilatory parameters such as MV (minute ventilatory volume)/$P_{0.1}$, T_i/T_t (inspiratory time/total respiratory time), TV/T_i, and $P_{0.1}/TV/T_i$. During breathing of the ambient air, $P_{0.1}$, $MV/P_{0.1}$ and $P_{0.1}/TV/T_i$ showed a significant difference between the control groups and patient groups, and between the patient groups of obstructive and restrictive diseases. During CO_2-rebreathing, $P_{0.1}$ and $P_{0.1}/TV/T_i$ showed a significant difference between the control groups and patient groups. $P_{0.1}$ and $P_{0.1}/TV/T_i$ correlated significantly. We did not find any difference between the patients with normal PaO_2 and those with hypoxemia. However, during CO_2-rebreathing, there was a characteristic change of $P_{0.1}$ in the hypercapnic patient group compared with the normocapnic patient group. As a result, $P_{0.1}$ and $P_{0.1}/V_T/T_i$ are the valid indices of central inspiratory neuromuscular drive and effectiveness of respiratory muscles contraction. They are useful in the diagnosis of advanced chronic lung diseases that accompany CO_2 retention.