

In patients with chronic obstructive pulmonary disease (COPD) expiratory flow-limitation is frequently present during exercise or even at rest, leading to dynamic hyperinflation (DH) with concurrent decrease of the inspiratory capacity (IC). Development of dynamic lung hyperinflation, increased central output and ineffective inspiratory muscle response are thought to contribute to the development of exertional dyspnea and limitation of physical activity. The 6-minute walk test (6-MWT) has been extensively used in the clinical evaluation of patients with chronic cardiac and pulmonary diseases. It is recognised that this test better reflects functional status than FEV_1 and adds prognostic information useful to the staging of patients with COPD. However, up to now little is known about physiological responses to this test.

20 patients with moderate to very severe COPD (FEV_1 $38,9 \pm 3,219\%$ pred., RV/TLC $57,6 \pm 1,826\%$) underwent measuring of pulmonary function tests (F-V curve, static lung volumes), occlusion mouth pressures and breath-by-breath measurement of flow, volumes and O_2 and CO_2 concentration during the 6-MWT.

Both tests were related to pulmonary hyperinflation expressed by RV/TLC and maximal changes of IVC reflecting dynamic hyperinflation. Serially measured IVC fell more rapidly and extensively during walking, which was accompanied by limited increase in V_T and V_E , which were significantly lower during

walking. During the 6-MWT $\dot{V}O_2$ and V_T reached plateau within 2 min., while $\dot{V}CO_2$ and V_E within 3 min. During cycling $\dot{V}O_2$, $\dot{V}CO_2$ and V_E rose continuously, while V_T reached plateau within 4 min.

In conclusion, 6-MWT seems to be rather endurance test and is associated with more pronounced dynamic lung hyperinflation and mechanical constrain of maximum minute ventilation in comparison with cycling.