

## **Cardiorespiratory functions**

### **Mobile cardio-pulmonary exercise tests in patients over 70 years with coal workers pneumoconiosis**

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#### Introduction:

Patients with coal workers pneumoconiosis (CWP) often suffer from shortness of breath on exertion. Especially in very old patients bicycle based exercise tests with maximal workload (CPET) may be contraindicated. New techniques allow to perform 6 minute walking tests with mobile spiroergometry device (mCPET). Aim of our study was to describe mCPET in patients with CWP.

#### Material and Methods:

21 former hard coal miners (82±6 years) with shortness of breath on exertion were examined by spirometry, bodyplethysmography and CO transfer factor measurement. CPET was not considered due to several contraindications e.g. musculoskeletal or cardiovascular disorders. mCPET was performed with an Qxycon Mobil®(Carefusion, USA).

#### Results:

No adverse events were noted. Under treatment lung function showed no obstructive pattern, but a restriction or reduced CO transfer factor (n=4). 16 patients completed the mCPET. Mean walking distance was 60%<sub>pred</sub>. Nearly all parameters showed a plateau after the 3<sup>rd</sup> minute. Maximum heart rate reached 79% HF<sub>max</sub>, VO<sub>2</sub> 63.76±13.41%<sub>pred</sub>, minute ventilation 57.0±15.4%<sub>pred</sub> and EQO<sub>2</sub> 37.7±5.9. Exercise induced ventilatory impairment was noted in 2 patients, whereas AaDO<sub>2</sub> increased to 37.0±11.0 mmHg. There was a correlation between VO<sub>2</sub> and FEV<sub>1</sub> (r=0.80), but no correlation between ILO-profusion and VO<sub>2</sub> or FEV<sub>1</sub>.

#### Discussion:

mCPET was feasible and yielded higher sensitivity and additional objective informations in very old patients.