

EVALUATION AND KEY POINTS OF THE 6 MINUTE-WALKING-TEST IN COMBINATION OF MOBILE SPIROERGOMETRY: METHODOLOGICAL AND PHYSIOLOGICAL ASPECTS

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Patients with coal worker's pneumoconiosis (CWP) often suffer from shortness of breath on exertion. Especially in very old patients maximal bicycle-based exercise tests (CPET) may be contraindicated. New techniques allow to perform 6 minute-walking-tests with mobile spirometry devices (mCPET). The aim of our study was to describe methodical and physiological aspects of mCPET in very older patients with CWP.

Material and Methods: 21 former hard coal miners (83 ± 5 years), with CWP were examined by spirometry, bodyplethysmography, CO transfer factor measurement and X-ray. CPET was not considered due to contraindications. mCPET was performed according to ATS recommendations with an Qxycon Mobile® (Carefusion, Germany).

Results: Under treatment lung function showed no obstructive pattern, but a restriction or reduced CO transfer factor ($n=5/20$). All patients completed the mCPET. No adverse events were noted. Nearly all parameters showed a plateau after the 3rd min (steps, velocity, distance). Mean walking distance and heart rate reached $60\%_{\text{pred}}$ and $79\%_{\text{pred}}$. VO_2 and AaDO_2 increased to $63.8 \pm 13.4\%_{\text{pred}}$ and $37.0 \pm 11.0 \text{ mmHg}$. There was a correlation between VO_2 and FEV_1 ($r=0.80$), but no correlation between ILO-profusion and VO_2 or FEV_1 .

Discussion: mCPET was feasible and yielded to additional and objective information in very old patients then a normal 6 minute-walking-tests.