# CARDIOPULMONARY EXERCISE TESTING (CPX) IN PATIENT WITH COMBINED PULMONARY FIBROSIS AND EMPHYSEMA (CPFE)

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## Introduction

CPFE is a distinct entity among fibrosing lung diseases. We wondered whether CPX is helpful in showing differences between patients with and without resting PH.

## Methods

CPX in CPFE patients with typical CT findings and lung function-tests (normal or slightly decreased VC, FVC and $FEV_1$/FVC, decreased TLCO) and without resting hypoxemia.

## Results

24 patients had CPX-testing. 6 patients with PH had significantly lower $SaO_2$ (%), TLCO (%-pred.) and TLCO / VA (%-pred) than those without PH (92.5 ± 2.0 vs. 95.2 ± 1.9, 24.9 ± 5.9 vs. 43.4 ± 10.0 37.5 ± 6.9 vs. 53.3 ± 12.0 resp.), as well as more dead space ventilation ($p < 0.05$), there were highly significant differences ($p < 0.01$) between patients with and without PH in peak-$VO_2$ (918 ± 122 ml vs. 1397 ± 387 ml, $VO_2$/ kg IBW / min (13.1 ± 2.7 ml vs. 19.5 ± 5.0 ml), peak-$AaDO_2$ (66.8 ± 3.5 mmHg vs. 44.9 ± 10.2 mmHg), $AaDO_2$ at VT1 (57.5 ± 3.3 mmHg vs. 37.9 ± 9.9 mmHg), aerobic capacity (6.6 ± 1.7 ml $O_2$/Watt vs. 8.9 ± 1.6 ml$O_2$/watt), VE/$VCO_2$ slope (58.6 ± 17.9 vs. 39.2 ± 7.8) and Paet$CO_2$ (12.5 ± 2.1 vs. 7.9 ± 3.6 mmHg).

## Discussion

Patients with CPFE and PH have a significantly impaired gas exchange compared to those without PH. This has to be attributed to an additional pulmonary vascular pathology. If changes of the VE/$VCO_2$ slope during exercise are indicative of an exercise PH, needs further clarification by simultaneous right heart catheter examination.