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Title: Effectiveness of pulmonary rehabilitation including occupational therapy (OT) on the prognosis of patients with COPD

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Body: Aim: We reported that the appropriate pulmonary rehabilitation including OT according to the pathophysiology of patient with COPD improved his or her prognosis in the historical control study. In this prospective observational study, we investigated the effectiveness of our pulmonary rehabilitation program on the survival prognosis of COPD patients with long-term oxygen therapy (LTOT). Method: The subjects were 72 patients with COPD (male: female, 65:7, 69.6±6.8 years old, FEV1 0.76±0.29 L, % predicted 31.6±11.0%, FEV1/FVC 0.38±0.10) who underwent LTOT between 1995 and 2005. All patients were on medication and underwent CPET before pulmonary rehabilitation program. We decided the safe range using the data of CPET, and it was represented by each patient's Spo2 and pulse rate when a using pulse oximeter during exercise training and in daily life. All patients have been monthly followed up in our specialized clinic for the patients with LTOT. Result: Forty-six patients died during the follow-up period. Causes of death were the respiratory failure in 20 cases (43.5%), malignant diseases in 10 cases (21.7%) and other diseases in 16 cases (34.8%). The overall 50 % survival time was 9.0 years after LTOT. The 50 % survival times in patients with less than 30% of FEV1 % predicted, 11ml/kg/min of peak oxygen uptake were 8.7 years and 8.1 years after CPET, respectively. Conclusion: The appropriate pulmonary rehabilitation including OT according to the pathophysiology of each individual patient with COPD decreased the number of death caused by respiratory failure and greatly improved the prognosis of patients with very severe COPD as compared to the previous studies.