European Respiratory Society
Annual Congress 2012

Abstract Number: 1167
Publication Number: P4446

Abstract Group: 4.1. Clinical physiology and Exercise
Keyword 1: Cystic fibrosis **Keyword 2:** Exercise **Keyword 3:** No keyword

Title: Clinical and functional determinants of exercise limitation in adult patients with cystic fibrosis

Mr. Jean 8220 Pastré pastrejean@yahoo.fr [1], Dr. Anne 8221 Prévotat anne.prevotat@chru-lille.fr MD [1], Dr. Catherine 8222 Tardif Catherine.Tardif@chu-rouen.fr MD [3], Dr. Abderrahmane 8223 Mammar BMammar@chu-grenoble.fr MD [4], Dr. Jean-Marc 8224 Perruchini j.perruchini@opendrp.fr MD [5], Dr. Lidwine 8225 Wémeau-Stervinou lidwine.wemeau@chru-lille.fr MD [1], Dr. Thierry 8226 Perez Thierry.PEREZ@CHRU-LILLE.FR MD [1], Prof. Dr Alain 8227 Duhamel alain.duhamel@univ-lille2.fr MD [2] and Prof. Dr Benoit 8228 Wallaert Benoit.WALLAERT@CHRU-LILLE.FR MD [1]. [1] Clinique des Maladies Respiratoires, CRCM Adulte, Hôpital Calmette CHRU, Lille, France ; [2] Unité de Biostatistiques, Hôpital Calmette CHRU, Lille, France ; [3] Physiologie Respiratoire, Pavillon Derocque, CHU C. Nicolle, Rouen, France ; [4] Service de Pneumologie, CHU Michallon, Grenoble, France and [5] Service de Rehabilitation Respiratoire, Clinique de Médecine Physique les Rosiers, Dijon, France .

Body: Exercise tolerance is reduced in adult patients with cystic fibrosis (CF). The aim of this retrospective analysis was to determine the mechanisms of this limitation. Patients and methods Cardiopulmonary exercise testing (CPET) with peak exercise blood gas was performed in 102 patients (Sex Ratio M/F=0.51) aged 28+/-11 years old (FEV1<50%: 48 patients; FEV1 between 50 and 80%: 22; FEV1>80%: 32). VO2 peak was correlated with clinical, biological and functional parameters. Results VO2 peak was decreased (<84%) in 85% of patients (25+/-9 ml/kg or 65+/-21% predicted) and was correlated with Body Mass Index (r = 0.26), CRP (r = -0.34), FEV1 (r = 0.71), FVC (r = 0.69), RV (r = -0.63) and DLCO (r = 0.56). Upon exercise parameters, VO2 peak was correlated with VE/VO2 at ventilatory threshold, peak VD/VT, peak PaO2, PaCO2 and P(A-a)O2, and ventilatory reserve (r= -0.50 respectively, -0.64, 0.54, 0.64, -0.54 and 0.37). In multivariate analysis, FEV1 was the most predictive parameter of VO2 peak impairment, accounting for 48% of VO2 peak alteration. Reduced or absent ventilatory reserve and excessive hyperventilation (VE/VO2 threshold) accounted for respectively 10 and 8% of VO2 peak alteration. Peak VD/VT and P(A-a)O2 explained only 1% each of the VO2 peak value. Conclusion Limiting aerobic capacity in adult patients with cystic fibrosis is correlated with nutritional status, inflammation and lung function. This limitation is largely dependent, not only on FEV1, but also on the importance of ventilatory response to exercise. CPET is useful for a better management of CF patients.