European Respiratory Society
Annual Congress 2012

Abstract Number: 2166
Publication Number: P2524

Abstract Group: 10.1. Respiratory Infections
Keyword 1: Infections **Keyword 2:** COPD - diagnosis **Keyword 3:** Epidemiology

Title: Colonization in advanced chronic obstructive pulmonary disease

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Body: Background: Isolation of potentially pathogenic organism from the sputum is associated with at least one hospitalization for COPD exazerbation (Martinez-Garcia et al. Chest 2011; 140: 1130-1137). But there is still a lack of examinations in larger populations of patients with COPD and pathogenic colonization. Aims: This examination was performed to evaluate the colonization in patients with advanced COPD. Methods: In this single- center evaluation, 379 patients with advanced COPD (GOLD III and IV) in our pre- transplant outpatient clinic were screened between October 2008 and June 2011 by lung function, exacerbation rate within the last 12 month and sputum analysis. Results: The median exacerbation rate within the last 12 months was 2 (IQR 1-3). 51,7% of the patients had expectoration and 40,9% had none (7,4% remains unknown). We analyzed the sputum of 196 patients and had a positive sputum culture in 31,6% of the patients, which is 16,4% of the whole examination group. Patients with a positive sputum culture were significant more often hospitalized due to exacerbation (p=0.02). 94 patients (24,8%) underwent lung transplantation in the observation period. 19% of the explanted lungs had a proof of pathogenic organism. In 71 patients (75,5%) analysis of the sputum before transplantation was concordant with the results of the explanted lung. 11 patients (11,7%) had a proof in the explanted lung and no positive sputum or expectoriation before. Conclusion: Even in patients with end stage COPD chronic bacterial colonisation does play a role only in a minority of the patients (16%). The proof of pathogenic organism correlates with significant more hospitalization due to exacerbations.