Title: Invasive pulmonary aspergillosis in patients with chronic obstructive pulmonary diseases

Body: The purpose of this study is to investigate the clinical and demographic characteristics and treatment responses of Invasive pulmonary aspergillosis (IPA) in patients with COPD. From January 2006 to December 2011, 71 patients with a positive culture of Aspergillus from lower respiratory tract samples were examined. Of these patients, 11 (15.4%) had IPA with grade 3 or 4 COPD. Aspergillus hyphae was detected in the lung biopsy in three (27.3%) of 11 and defined as proven IPA; the pathological sample was not taken in the other eight (72.7%) patients, and these were defined as probable IPA. Aspergillus isolates were identified as six Aspergillus fumigatus and three Aspergillus niger in nine patients. Patients were diagnosed as IPA 13.8 ± 3.8 days after admission. While five patients required intensive care unit admission, four of them received mechanical ventilation. The most common symptom was dyspnea (n=11, 100%). Positive results of serum galactomannan assays were detected in nine patients (81.8%). The most common finding on chest X-ray and computed tomography (CT) (respectively 63.6%, 72.7%) was infiltration. Worsening radiological findings were observed in seven patients (63.6%). Amphotericin B was the initial drug of choice in all patients and five patients were discharged with oral voriconazole after amphotericin B therapy. Six patients (54.5%) died before treatment was completed. As a conclusion, IPA should be the part of the differential diagnosis particularly in patients with severe and very severe COPD presenting with dyspnea exacerbation, poor clinical status, and a new pulmonary infiltrate under broad-spectrum antibiotics and steroids.