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Title: Prognostic factors of COPD patients admitted in ICU for acute exacerbation requiring invasive ventilation

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Body: Background: For patients with chronic obstructive pulmonary disease (COPD), the first acute exacerbation requiring mechanical ventilation is a breaking point in the disease. Methods: We conducted a retrospective study to estimate the cumulative survival of COPD patients after their first intubation and the prognostic factors of these patients. Results: Between January 2000 and December 2010, 110 patients (50.9% stage III and 30.6% stage IV according to GOLD) were admitted in intensive care unit (ICU) for acute exacerbation of their COPD. The main aetiologies of the acute respiratory failure were pneumonia (n=40) and acute cardiac failure (n=30). ICU mortality was 22% and the median survival time was 68 months. In cox multivariate analysis, three independent prognostic factors were found: admission in ICU for proved infectious exacerbation (HR=1.83; 95%CI [1.01-3.34], p=0.047), GOLD Stage III and IV (HR= 3.78; CI 95% [1.44-9.92], p=0.007) and acute renal failure (HR=5.79; CI95% [3.01-11.20], p<0.0001). Conclusion: Cumulative survival of COPD patients with acute respiratory failure depends mainly on severity of COPD, exacerbation aetiology and associated acute renal failure.