

European Respiratory Society Annual Congress 2013

Abstract Number: 2690

Publication Number: P4910

Abstract Group: 5.2. Monitoring Airway Disease

Keyword 1: COPD - management **Keyword 2:** Longitudinal study **Keyword 3:** Spirometry

Title: The 2006 and 2011 GOLD classifications and five-years mortality in COPD

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Body: Background: In 2011, the global initiative of chronic obstructive lung disease (GOLD) published new guidelines for chronic obstructive pulmonary disease (COPD). The severity classification from 2006 took respiratory failure into account, but the 2011 classification is based on spirometry alone. A new risk stratification based on symptoms and exacerbations in addition to spirometry was launched in 2011. Aim: To compare how the GOLD 2006 and 2011 definitions of severity and the 2011 risk stratification were associated with mortality in COPD. Methods: A cohort of 419 Norwegian COPD patients aged 40-75 was examined in 2006, assessing spirometry, arterial blood gases, exacerbation history, and dyspnoea. Survival status was assessed in 2011. Cox proportional hazard models adjusted for sex and age were used to analyse the association between mortality, the two GOLD classifications, and the GOLD 2011 risk groups. Results: Median follow-up time was 5.12 years, during which 64 subjects died. Using the 2006 classification, subjects with stage III did not have significantly increased death risk compared to GOLD stage II. Using the 2011 definition, subjects in stage III had a 94% higher risk of death compared with stage II. Risk groups B-D all had over three fold increased risks of death compared to risk group A, with group C having the highest hazard ratio (confidence interval) of 6.0 (2.0, 17.7). Conclusion: Respiratory failure in COPD seem to partially explain increased mortality in the 2011 GOLD stage III. Clinical variables added to spirometry in the risk stratification groups from the 2011 guidelines carry prognostic information, but the mortality risk does not increase gradually in risk groups B-D.