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Mortality and recurrence of COPD hospitalisation: a nationwide Danish cohort study

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Background & Aim: to analyse the association between recurrence of hospitalisation with chronic obstructive pulmonary disease (COPD) and in-hospital and one-year mortality.

Methods: A register-based cohort study was conducted in Denmark (5.4 million citizens). All hospitalisations with COPD in Denmark during the period from year 1994 to 2011 were identified. For the year 2011, hospitalisations were categorized according to the patient's number of prior COPD hospitalisations. By use of logistic regression this number was related to the in-hospital and one-year mortality, adjusted for age, gender, and comorbidity index.

Results: in total, 14 705 patients were hospitalised 23 031 times. With recurrence of hospitalisation the in-hospital mortality decreased gradually from being highest at 8.3% in second time hospitalisations to 3.5% in hospitalisations of patients who had been hospitalised more than 15 times before (8 % of the patients) adjusted OR 0.49(95% CI 0.38-0.65). One-year mortality increased gradually from 26% in first to 41% in +15-time hospitalisations, adjusted OR 2.32(95% CI 2.07-2.60). The average length of stay and time between hospitalisations decreased with recurrence of hospitalisations.

Conclusion: in COPD the in-hospital mortality decreases with increasing recurrence of hospitalisation. This is probably due to lowering of the severity threshold for admission. Nevertheless, long-term mortality increases with each additional exacerbation-related hospitalisation.