



# Acute exacerbation in COPD: we must do more



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**COPD audit: COPD exacerbation and pneumonia are internal medicine emergencies needing treatment in specialist units** <http://ow.ly/VgjSS>

If one asks medical students which emergencies they hold as especially important in internal medicine, more than 90% first mention myocardial infarction and stroke. This is not surprising, because these diseases occupy the first places in the mortality statistics contained in the Global Burden of Disease report [1]. Nevertheless, respiratory failure is only described as rare, despite the fact that chronic obstructive pulmonary disease (COPD) is ranked fifth and pneumonia seventh in the same report. While the high hospital mortality rate of myocardial infarction and stroke is well known, the risk of acute exacerbation of COPD and of pneumonia is often underestimated.

Nationwide outcome registries for hospital mortality in myocardial infarction exist in Sweden and in the UK, demonstrating an in-hospital mortality of 7.6% and 10.5% [2]. For stroke it is higher, for several reasons; recently published data from the North Dublin population stroke study reported 20.7% [3]. Data regarding mortality for hospital-admitted community acquired pneumonia vary widely, as a function of different methodologies used in different studies; on average it might be between 10 and 15% [4]. Also for patients hospitalised with an acute exacerbation of COPD, numbers vary widely; a recently published systemic review reported mortality in the range between 1.8 and 20.4% with a mean of 3.6% [5]. In this issue of the *European Respiratory Journal*, the first data from the European COPD audit are presented. This study included 16016 patients hospitalised with acute exacerbation of COPD from 422 hospitals in 13 European countries [6]. Mortality, at about 5%, was higher than in most other studies, which may be explained by the high number of patients requiring mechanical ventilation (mostly noninvasive positive pressure ventilation), making it more likely that these patients had been more severely ill than those in other studies. This is in line with a recently published US study including only patients with acute exacerbation of COPD on mechanical ventilation, which showed a hospital mortality rate of 5.9% [7].

Hospital mortality rates in patients suffering from myocardial infarction and stroke have decreased consistently over the past decades. One major reason for that was the foundation of coronary care and stroke units led by qualified staff and doctors, and offering standardised treatment approaches. For both units a dramatic improvement with regard to a number of outcome measures could be shown [8, 9]. Meanwhile, this type of unit has been established nationwide in nearly all developed countries. For respiratory failure, however, especially for patients with pneumonia and acute exacerbation of COPD who are not primarily admitted directly to an intensive care unit, nothing comparable has been set up. KOLDITZ *et al.* [10] analysed data from the German competence network for community acquired pneumonia (CAPNETZ) and found that mortality was up to 20% in patients with respiratory failure and increased further if the deterioration of the respiratory function starts later than 72 hours after hospital admission: demonstrating that treatment failure had been overlooked due to a lack of a standardised

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management plan for these patients. The COPD audit found that only 45.0% of the patients with mild and 77.2% with severe respiratory acidosis received mechanical ventilation, although the positive effect of this measure has been clearly demonstrated [11]. In addition, only 81.6% of patients with acute exacerbation of COPD underwent blood gas diagnostics at admission, although this has been strongly recommended in various guidelines. If it was not clear enough before, the COPD audit has finally demonstrated that the management of acute exacerbation of COPD is far away from being good in European hospitals.

One of the most important limitations in the management of acute exacerbation of COPD is the lack of a standardised operating procedure for these patients. While this is available on coronary care or stroke units on the basis of a huge number of randomised controlled trials, the evidence in diagnostics and treatment of acute exacerbation of COPD is low. Most recommendations, with the exception of those for noninvasive ventilation, relating to acute exacerbation of COPD in the American Thoracic Society/European Respiratory Society guidelines [11] remain vague and are not based on reliable study data. A lot of questions remain unanswered. Should bronchodilators be used during the acute phase of acute exacerbation of COPD and, if yes, which ones and how should they be delivered? Does a short term course of oral corticosteroids make sense for all patients with acute exacerbation of COPD and what should be done if oral treatment is not feasible? Who requires antibiotic therapy? Is there a place for antivirals? The most important problem, however, is the fact that most of the patients with acute exacerbation of COPD suffer from comorbidities, which often worsen during the acute exacerbation course [12]. The high readmission rate in the COPD audit is partly related to an inappropriate treatment of mainly cardiac comorbidities. More studies are necessary to develop a standardised diagnostic and therapeutic approach for the management of patients with acute exacerbation of COPD.

The COPD audit was necessary to show the deficits of care in patients with respiratory failure due to acute exacerbation of COPD. Audits can generate awareness of those problems and, consequently, improve quality of care. Therefore, audits should be made available for more hospitals. However, audits will not solve the problem of inadequate care of respiratory failure patients. This requires an understanding, from physicians, and also from healthcare politicians, that COPD exacerbation and pneumonia are internal medicine emergencies that need to be treated in specialist units.

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