Gender and mortality following hospitalisation for COPD

We read with interest the article by Gonzalez *et al*¹ on gender differences in survival following hospitalisation of chronic obstructive pulmonary disease (COPD) patients in a large cohort of a Canadian population. There are limited data on gender differences and mortality in COPD. Despite women having worse dyspnoea and health status, they appear to have a lower mortality rate than men.² The study conducted by Gonzalez and coworkers demonstrated an interesting finding of a significantly better mean survival and time to rehospitalisation in female patients. We conducted a study of COPD patients to evaluate the predictors of mortality and readmission after an acute exacerbation.³ The study included 402 episodes in 205 patients admitted to our university hospital. We examined a number of factors in relation to mortality and readmission after an exacerbation. The potential predictors evaluated in the study included FEV₁% predicted, Medical Research Council dyspnoea scale, performance status, respiratory medications, comorbidities, social circumstances, smoking status and blood parameters including white cell count and C reactive protein. The main demographics and characteristics of the study population are shown in table 1.

The cumulative mortality of our study population was 6.8%. In terms of the cause of death, the majority of our study population died of respiratory causes, predominantly COPD, a finding very similar to that found by Gonzalez *et al*. Men had a higher rate of admissions than women, comprising 56% of total hospitalisation episodes. Social isolation was the only significant predictor of mortality in our cohort. Reduced physical activity in association with social isolation may be related to increased mortality. The factors associated with increased risk of readmission included lower FEV₁% predicted

and continued smoking. Contrary to the findings of Gonzalez *et al*, we found no significant difference in mortality in relation to gender, following hospitalisation for COPD. This could be because of a number of factors. First, we had a significantly smaller sample size. Second, our study may have represented a different population altogether with diversity in ethnic background and genetic makeup. Finally, the patients were younger in our cohort that may have had an effect on the overall mortality.

In our opinion, Gonzalez and coworkers have evaluated a very unique aspect of COPD outcome after hospitalisation. The immediate period after an acute exacerbation is a very significant time for interventions such as smoking cessation, and if utilised effectively, it may have a positive impact on mortality in this disabling disease.

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Competing interests None.

Ethics approval This study was a retrospective analysis of a COPD database, so approval was obtained from the Hull and East Yorkshire Hospital audit committee.

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Authors' response

We thank Dr Fahim and colleagues¹ for their interest in our paper examining gender differences in survival following chronic obstructive pulmonary disease (COPD) hospitalisation.² Their group has previously examined possible predictors of mortality and readmission in a group of patients hospitalised for COPD.

Fahim *et al* report a cumulative mortality of 6.8% although the duration of follow-up in their study is not specified. In our cohort of patients hospitalised for COPD, mortality

in women and men was 12.6% and 18.3% at 1 year, and 43.8% and 56.2% at 5 years, respectively. Male gender was associated with a significantly increased risk of death (HR 1.45, 95% CI 1.42 to 1.49).

Fahim *et al* did not observe significant gender differences in mortality. We agree that this is probably due to a significantly smaller sample size and perhaps a younger patient population. The analysis of large health administrative databases has limitations, in particular the absence of smoking status or lung function data. Yet their use provides much strength in numbers. The older age of our cohort is based on the selection of subjects aged ≥ 66 years, to ensure at least 1 year of prescription information prior to the index hospitalisation.

We agree with Fahim and colleagues that the period immediately following an exacerbation of COPD provides a key window for interventions. Awareness of the high death rate in older patients hospitalised for COPD and increasing recognition of gender differences in mortality and clinical expression of COPD^{3 4} ultimately may lead to more targeted interventions and better outcomes.

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CORRESPONDENCE

Atoll sign or reversed halo sign? Which term should be used?

We read with great interest the article by Walsh and Robertson¹ reporting a case of cryptogenic organising pneumonia. The authors included wonderful images of a CT pattern they called the 'atoll sign', which has

Table 1 Selected demographics of study participants*

Subjects (n)	205
Age in years (median, range)	69 (47–93)
Gender (n, %)	
Male	106 (52)
Female	99 (48)
Admission episodes (n, %)	
Male	225 (56)
Female	177 (44)
FEV ₁	1.9±0.7
FEV ₁ % predicted	42±16.2
Smoking (pack years)	27.5±9.8
Mortality (%)	
Male	7.6
Female	6.0

*The data are presented as mean and SD, unless otherwise stated.
FEV₁, forced expiratory volume in one second.