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Mortality predictive capacity of the 6-min walk distance

To the Editors:

In a recent issue of the *European Respiratory Journal* we read with interest the article by COTE *et al.* [1] on the capacity of the 6-min walk distance to predict mortality in chronic obstructive pulmonary disease patients. We noted a striking difference between the cut-off value reported by COTE *et al.* [1], corresponding to 350 m, and a cut-off value previously reported as the mortality predictor in patients with idiopathic pulmonary fibrosis, which was 207 m [2].

Even considering the obvious diversities between the two diseases, such a difference is quite surprising. The two populations cannot be compared by forced expiratory volume in one second values because such data are lacking in the article by LEDERER *et al.* [2], but in both studies there are the data concerning forced vital capacity (FVC). Thus, we are permitted to compare the lung function by this parameter, where a remarkable difference can also be found: COTE *et al.* [1] reported a mean FVC value of $72.7 \pm 21\%$ predicted, whereas LEDERER *et al.* [2] reported a mean value of $51 \pm 17\%$ pred. The mortality rates were approximately two-fold in the study by COTE *et al.* [1] and four-fold in the study by LEDERER *et al.* [2]. In particular, the mortality rates recorded by LEDERER *et al.* [2] were significantly lower in the fourth quintile, patients walking 314–395 m, which included the allocated 350 m cut-off reported by COTE *et al.* [1].

As physicians currently working in a pulmonary rehabilitation setting we would like to learn more about the prognostic significance of the distance walked during the 6-min walk distance test in different respiratory diseases, which was not discussed in the study by COTE *et al.* [1].

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STATEMENT OF INTEREST

None declared.

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From the authors:

We have read with interest the observations by G.G. Riario Sforza and C. Incorvaia regarding the differences in the threshold values used to predict mortality that were provided by LEDERER *et al.* [1] for patients with idiopathic pulmonary fibrosis (IPF) and those that were reported for patients with chronic obstructive pulmonary disease (COPD) [2].

First, G.G. Riario Sforza and C. Incorvaia correctly point out that LEDERER *et al.* [1] quote a threshold of 207 m as being more specific for waiting-list mortality at 6 months but, in the discussion, LEDERER *et al.* [1] also state that the 350-m cut-off remained more sensitive for waiting-list mortality, a value that is very close to the one we reported [2].

Secondly, G.G. Riario Sforza and C. Incorvaia show surprise about the difference in mortality between the patients with IPF and those with COPD in our study. This has several likely explanations. To begin with, the patients reported by LEDERER *et al.* [1] were all on the waiting list for transplantation due to IPF, whereas ours were patients with different severity of COPD attending regular clinics, that is to say, healthier [2]. Furthermore, LEDERER *et al.* [1] do not mention the use of corticosteroids or immunosuppressants in their patients but it is very likely that patients with such severity of IPF may have been on agents capable of inducing muscle dysfunction. Finally, patients with COPD, even on transplant lists, have a better prognosis than patients with IPF or other underlying disease, thereby making direct comparisons difficult.

Thirdly, G.G. Riario Sforza and C. Incorvaia request more information about the specific prognostic significance of the 6-min walk distance (6MWD) in COPD as the topic was not discussed in our paper. The specific goal of our study was to compare the behaviour of different predictive equations with the raw 6MWD value in metres and not to analyse the predictive value of the 6MWD *per se*. We have already published two studies that can help with the specific question [3, 4]. The study by PINTO-PLATA *et al.* [3] shows that the mortality for patients walking between 201–300 m was 40%, very similar to that reported by LEDERER *et al.* [1]. This finding was also confirmed in a much larger cohort by CASANOVA *et al.* [4].

In conclusion, the literature suggest that patients with respiratory diseases that walk >350 m have a relatively good prognosis and may not need to be followed as closely. Once patients walk <350 m mortality increases linearly. The 6-min walk distance is an excellent and simple tool to follow progression and help determine outcome.

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STATEMENT OF INTEREST

None declared.

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