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# Obstructive lung function in idiopathic pulmonary fibrosis

**Osamu Nishiyama and Yuji Tohda**

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We read with considerable interest the letter from M Carone and FG Salerno, in which they commented on our article demonstrating that forced expiratory volume in 1 second/forced vital capacity ($FEV_1$/FVC) negatively predicts survival in idiopathic pulmonary fibrosis (IPF).[1]

As M Carone and FG Salerno described, it is true that lung elastic recoil increases with progression of lung fibrosis in IPF. The idea that high lung elastic recoil makes it difficult to blow expiration fast and consequently makes $FEV_1$/FVC high might be possible. Evaluating real lung compliance by measuring transpulmonary pressure of patients with IPF and assessing an association with $FEV_1$/FVC would be helpful to understand the mechanism, as M Carone and FG Salerno suggested.

Cortes-Telles et al. demonstrated a negative relationship between disease severity assessed with total lung capacity and $FEV_1$/FVC, although they excluded patients with $FEV_1/FVC < 70\%$ and with evident emphysema on chest CT from their analysis.[2] Furthermore, a few studies demonstrated a negative relationship between $FEV_1$/FVC and survival the same as in our study.[3,4] Therefore, it is likely that lower $FEV_1$/FVC has a favorable impact on both severity and survival in IPF, considering the consistent results of previous reports including ours.

Several reasons might explain the favorable impact of low $FEV_1$/FVC in IPF. The somewhat good effect of smoking, simply negative mirror image of FVC, and increased lung elastic recoil which was proposed in the letter would be candidates. In our data, $FEV_1$/FVC showed a significant negative relationship with survival[1]; however, interestingly, the significant relationship disappeared when evaluated among only never smokers, although the number of patients who were included in the analysis decreased from 114 to 57 (data not shown). Further studies among more patients exclusively with never smokers and/or among patients whose detailed smoking history, such as pack-year, are available may provide some insights. Anyways, we definitely concur with the opinion of M Carone and FG Salerno that further studies are needed to understand the role of airway obstruction which is involved in IPF.

## References

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Department of Respiratory Medicine and Allergology, Faculty of Medicine, Kinki University, Osakasayama, Osaka, Japan

**Corresponding author:**
Osamu Nishiyama, Department of Respiratory Medicine and Allergology, Faculty of Medicine, Kinki University, 377-2 Onohigashi, Osakasayama, Osaka 589-8511, Japan.
Email: nishiyama_o@yahoo.co.jp