Reviewer’s report

Title: Change in Forced Vital Capacity and Associated Subsequent Outcomes in Patients with Newly Diagnosed Idiopathic Pulmonary Fibrosis

Version: 0 Date: 07 Aug 2015

Reviewer: Jeffrey Horowitz

Reviewer's report:

This is a retrospective study of almost 500 patients diagnosed with IPF between 2011 and 2013 whose physician-reported data included pulmonary function studies obtained at diagnosis and 6 months subsequent to the diagnosis and whose data regarding healthcare utilization and outcomes were followed for up to two additional years. The information was provided by physicians distributed among academic and community settings who received compensation and selected patients from their practice (approximately 3 patients per physician) for inclusion in the study. The patients were stratified into categories based on the relative change in FVC (< 5%: stable, 5-10%: marginal, or > 10%: significant) over the initial 6 months following diagnosis ("concurrent") group and then followed forward ("subsequent") for assessment of outcomes including "suspected" acute exacerbations, physician visits, and mortality. The bottom line of the study was that the patients with marginal or significant declines during the 6 months following diagnosis were more likely to utilize health care, have acute exacerbations and die than those with "stable" FVC.

Overall, this study is consistent with prior studies relating a decline in FVC portends a poor prognosis from IPF. The size, retrospective review, setting (combined academic and community) and direct assessments with specific utilization outcomes provides some novelty that expands on existing studies. The data are relatively straightforward. Some conclusions could reflect a bias in this industry sponsored and authored study. For example, the conclusion that the study "highlights the importance of preservation of lung function in IPF patients" suggests that a decline in FVC is causal with regards to the reported outcomes. It is unclear if the intervention to alter a decline in FVC would actually decrease the risk of an acute exacerbation (and the associated risk of mortality).

This study shows that 51% of the population did not have a decline in FVC and, therefore, may not benefit from "management that ameliorates" a decline in FVC. Unfortunately, this study is limited in that it does not advance our ability to predict those patients who will have a decline in FVC and might benefit most by intervention. Discussion regarding the heterogeneity of IPF and the need for studies to determine which patients should be targeted for treatment is warranted, as is discussion regarding the relationship between FVC and risk of acute exacerbation.
Notably, the average age of the patients included in this study (61 years) is below that which would be expected for a population of IPF patients. This raises the possibility of recall bias of the reporting physicians, and suggests that the patient population included may not accurately reflect the broader population of IPF patients.

There is no discussion or comment regarding the fact that patients in the "significant" progression group were more likely to be treated with Azathioprine and prednisone (there is no specific information included regarding treatment with the triple therapy of AZA/Pred/NAC). Given the association of AZA/Pred/NAC with increased mortality in IPF, this should be acknowledged in the text as a potential contributing factor to the worse outcomes observed in the "significant" group.

The introduction should be revised to include the recently updated ATS guidelines on IPF, which do include recommendations regarding recently approved therapies for IPF.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:
1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal