Reviewer’s report

Title: Antifibrotic treatment response and prognostic predictors in patients with idiopathic pulmonary fibrosis and exposed to occupational dust.

Version: 0 Date: 08 Jul 2019

Reviewer: Helen Parfrey

Reviewer's report:

Previous epidemiological studies suggest that exposure to certain dusts is associated with an increase risk of developing IPF. It is not known if such exposures affect outcome and/or response to anti-fibrotic treatment. The authors have undertaken an observational prospective cohort study of 115 newly diagnosed IPF patients who were treated with anti-fibrotic therapy (either pirfenidone or nintedanib) for 12 months to address this. They collected epidemiological data relating to job type and duration of dust exposure.

1. Of note, having an occupational dust exposure was defined as having been exposed to dusts 10 or more years prior to a diagnosis of IPF. One of the major limitations of such a study is the lack of established methodology to quantify the dust exposure. It is unknown if the intensity of the dust exposure differed between different occupations. For instance, previous studies have shown that carpenters have one of the highest occupational exposure to asbestos. As the authors collected data about the job title, can they review if those patients whose occupation is associated with the highest/heaviest dust exposure had different outcomes in terms of change in FVC, mortality, use of LTOT etc.

2. Both groups had exposures to asbestos - almost 50% in the exposed group and almost 20% in the non-exposed group. The mean duration of exposure is similar between both groups. What constituted exposure to asbestos? Did any of these patients have asbestos exposures that would support a diagnosis of asbestosis? For instance a heavy exposure for few years may be equivalent to a small exposure for many years. This needs to be clarified. Including a group of patients with asbestosis may influence the results of this study.

3. Please can the authors comment on the following statement:

in the text - in the non-exposed group the mean duration of dust exposure was 1.2 ± 2.8 years (page 7), but in table 1 the mean duration of asbestos exposure in the non-exposed group is 5.8 ±(13.6) years. The SD seems large as this suggests asbestos exposure may be > 10 years prior to diagnosis of IPF. Please review these data.
4. Baseline lung function is similar across the exposed and non-exposed groups and does not change after 1 year of treatment. These data suggest this cohort has milder/limited disease and slow progression. It may reflect inclusion of a group of patients with asbestosis. Can this be addressed along with point 2 above.

5. One of the limitations with this study is the absence of a placebo-controlled group. Hence it is not possible to comment on whether anti-fibrotic treatment is effective in slowing disease progression/reduce the number of patients experiencing decline in FVC>10% regardless of dust exposure. Similarly there are no data to demonstrate that dust exposure does not impact the beneficial effect of anti-fibrotic therapy at 1 year. The data presented suggest that for patients on anti-fibrotic therapy, dust exposure > 10 years from diagnosis does not affect the rate of progression as the number of patients with decline in FVC>10% is similar in the dust exposed and the non-exposed groups (as shown in additional file 1). Potential control group would be those patients who did not have anti-fibrotic treatment. Although a small number, did these patients have lung function at 12 months which could be used as a small untreated control group? The authors need to amend the statement they have provided in the conclusion on page 10 and abstract page 3 to reflect this.

Minor comments:

1. Page 8 and in table 1: familiarity for IPF - better to say "family history of IPF of familial 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.

No

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

No
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