Reviewer's report

Title: Seasonal variation of serum KL-6 levels is greater in patients with hypersensitivity pneumonitis

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Reviewer: Peter Wark

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This is an interesting observational series of a cohort of subjects with ILD that tracts variation in serum KL-6 over a period of summer and then winter. The authors demonstrate that greater variation of KL-6 in hypersensitivity pneumonitis, than the other ILDs and attribute this season, with differences in presumed bird HP compared to domestic HP.

This is an interesting observation and adds to the field, it brings KL-6 at least a little closer to being an interesting biomarker in ILD and will add to the evidence supporting it becoming so, but by itself this manuscript does not achieve this.

One major limitation is the cohort size, with rare diseases this is always a problem, but multi centre trials or national registries are going to be needed to really answer these questions. This will reduce the impact of the external validity of these findings. The authors need to consider the following issues.

Major

1. The limited time frame of measurement is somewhat arbitrary, confining this to winter months or summer, would encourage identifying these seasons as accounting for variability in KL-6. Certainly the measures vary in those with HP, but I think a stronger model would have been to measure levels consistently through the year and capture environmental data (domestic and external) in reference to this change. This is a much greater effort to go to but if if the investigators are seeking to establish a direct link then this would be needed. The limited numbers make the differences due to seasons in the figures unconvincing. I think there is too much focus on attributing these differences to season, but compelling that it may reflect variation in antigen exposure. This assertion needs to be reduced in veracity. The other potential causes for variation in antigen exposure should be explored more.

2. Page 17 of the discussion the authors introduce data on BAL cell counts. This is not described in the methods or the results. While reference is made to how diagnosis is made and presumably these BAL samples were taken at the time this is unclear. If BAL was done it must be described when and how. If this was not done in reference to KL-6 measures I am not sure this will be interpreted. Needs clarification. This should not appear in the discussion alone or should be removed.

Level of interest: An article whose findings are important to those with closely
related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

none