Reviewer's report

Title: Pulmonary venous occlusion and death in pulmonary arterial hypertension: survival analyses using radiographic surrogates

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Reviewer: John Coghlan

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This paper addresses an important issue – can radiographic surrogates of PVOD predict prognosis?

The paper is presented as a prospective registry study, with ethics approval – starting from 2004, at a time when PVOD was considered a rarity. The inclusion and exclusion criteria are more suggestive of a BNP study (age > 75, renal impairment as exclusion criteria) than a PVOD study, thus of 45 possible patients only 37 entered the study.

The methods section does not mention the time lines at which the CT scans were performed or analysed. It is unclear therefore whether the CT was performed at diagnosis or before diagnosis, and whether the scan was reviewed independent of other data (e.g. gas transfer, oxygen saturations and vital status).

The main findings are unusual mediastinal adenopathy was more common (or statistically at least no less common) in IPAH than CTD PAH as was septal thickening. This is unexpected.

Mortality associated with assumed PVOD was therefore more common in IPAH than CTD PAH again this is unexpected.

The added value of radiographic findings in the light of known risk factors was not assessed (Age, male sex, 6MWD, BNP/NTproBNP, CTD, RA pressure, PVR – as per REVEAL data) – so it is unclear that new data is being added.

The survival curves are very difficult to understand and suggest that in the absence of adenopathy or septal lines the survival of CTD PAH is at least as good as IPAH irrespective of the presence of ground glass shadowing – this is very much at odds with all published data.

Conclusion MAJOR COMPULSORY REVISIONS: the question asked is important. As presented it is difficult to have confidence in the data. Given the discrepancy between these authors findings and the published data, it is difficult to justify strong conclusions on such a small cohort. Further the conclusion reached that PVOD may explain the difference in outcome between IPAH and CTD PAH is not supported by the data in the manuscript.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests