Reviewer's report

Title: Ventilatory and ECMO treatment of H1N1-induced severe respiratory failure: results of an Italian referral ECMO center.

Version: 1 Date: 26 July 2010

Reviewer: Ian Seppelt

Reviewer's report:

Thank you for the opportunity to review this interesting paper.

This is a small single centre case series, of 12 patients including 7 who received ECMO. At this time every hospital in the world who has treated 2009/H1N1 patients is writing up their series so it is really important to have a message that is new or different, so that each paper is a positive contribution to the literature.

Unfortunately the message from this paper is confused, possibly by trying to do too much. The one part of the paper which has a new or interesting message is the section on lung ultrasound - the lung ultrasound data may even be worth a small paper in their own right. Only brief descriptions are given, however, and ultrasound pictures would be useful to make the point.

The section on diagnosis has significant errors. The argument is made that PCR for bronchoalveolar lavage has 100% sensitivity, compared to pharyngeal swabs. This is impossible to say without reference to a 'gold standard'. Seroconversion (using an H1N1 specific HA seroassay) might be considered a gold standard with which to compare the performance of the PCR. To do this it would also be necessary to evaluate other patients in the ICU who were PCR negative but had a clinical syndrome consistent with H1N1 pneumonitis. No data are presented on such patients. It is well described already that lower respiratory tract PCR had a higher diagnostic yield than upper respiratory tract PCR in 2009/H1N1 pneumonitis.

The section on ECMO does not really add to the already significant H1N1 ECMO literature, including large Australasian and Canadian series. The low mortality worries me. Criteria for initiating ECMO are not clearly spelt out in the paper and leave open the question whether ECMO was initiated too liberally or in patients who might have been fine without it. The haemorrhagic complication of ECMO are significant, and complement similar observations elsewhere in the world. The majority of patients who died in the Australasian ECMO series died of bleeding complications. In the abstract you state "ECMO treatments resulted safe and no major complications" (sic) which is clearly incorrect when you go on to say that three of the seven had major bleeding problems.

Finally, the paper needs significant copy editing in English. Some of the use of language is interesting, such as “the only one non-survived patient” in the results.
In conclusion, I think the strength of this paper is the new data on lung ultrasound in H1N1 pneumonitis and it would be good to develop this theme and perhaps dispense with other aspects of the paper that are not new and have already been well described elsewhere.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

I declare I have no competing interests