Reviewer's report

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

Version: 1 Date: 23 July 2010

Reviewer: Cedric Daubin

Reviewer's report:

General comment:

In this case series report, the authors describe their experience in H1N1-induced ARDS using ventilation strategy or ECMO. Despite few patients analyzed (n=12), they conclude that BAL is better than pharyngeal swab to detect virus and that ECMO assistance is safe and feasible in this context. As prior studies have evaluated with larger sample sizes, feasibility, safety and efficiency of emergency ECMO as a last resort therapeutic option in cardiac arrest (e.g, Massetti M in Ann Thorac Surg 2005, Mégarbane B in Intensive Care Med 2007), refractory shock (and e.g, Daubin C in Crit Care 2009), H1N1 ARDS (e.g, Davies A in Jama 2009 cited in the paper), and ARDS (e.g, Peek GJ lancet 2009 cited in the paper), this paper confirms previous findings rather than generating new knowledge. In addition 5 / 7 patients needing ECMO included in this series have been recently reported by the authors (e.g, Peris A in Scand J Trauma Resusc Emerg Med 2010 cited in the paper). Moreover, the authors do not discuss the important question regarding who, when and why ECMO in respiratory failure secondary to H1N1 influenza. However, because ECMO remains controversial, each experience can be useful to help clinicians to know what role ECMO may play in this context.

Major comment

Introduction section:

p3 The authors propose in this issue, to “discuss the critical care service in response to the H1N1 pandemic”. However, this point is not discussed in discussion section.

Methods section:

p4 Unclear if prospective or retrospective study

p4 “ventilation strategy”: What was the plateau pressure limit? what was the policy about prone position, diuretic and steroids use?

p4 “ECMO”: What were the ventilatory criteria to decide to start ECMO?

p5 Unclear if BAL, pharyngeal swab and subglottic aspiration were daily performed in each patient? What was the clinical impact of BAL in patients who were most hypoxic?

Results section
Overall patients section
Baseline characteristics and specific ventilatory characteristics over ICU course should be done for each patient. I suggest that Table 1 and 2 merge and that authors provide a table including the main epidemiologic and ventilatory characteristics of each patient.
Tidal volume, Fio2 rate, PaO2/FiO2, compliance and plateau pressure need to be done.

LUS section
In this section, it not appear clearly what was the contribution or the usefulness of LUS in the management of these patients
p8 “radiology examinations were extremely limited”. It is a subjective opinion. “extremely” in comparison with what? And what was the impact of LUS on the number of CT-scan performed?

ECMO section
The duration from intubation to start ECMO, and the time from end ECMO to extubation need to be done
The authors should report what was the impact of ECMO on ventilatory parameters (tidal volume, Fio2, peep, RR…)

Discussion section
In my opinion, key messages do not appear clearly throughout the discussion. Key messages (cited in Key messages section) should be done at the beginning of the discussion section and discussed separately throughout a specific paragraph. In addition, it is not clear if the findings about BAL and RT-PCR H1N1 generate new knowledge or not. This point need to be clarified and the findings compared with our knowledge on other respiratory viruses.

Minor comment
p6 “confirming ….reports”. It is a comment not a result. Delete
p6 CK: data not reported in table
p7 “patients improved..”, not correct. Change for “the patient..”
p9 “cigarette….”: result not discussion. Delete

Level of interest: An article of limited interest

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests