Reviewer's report

Title: Continuous positive airway pressure in bronchiolitis; a safe and effective treatment in ordinary paediatric wards

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Reviewer: Etienne Javouhey

Reviewer's report:

Review of the paper entitled “Continuous positive airway pressure in bronchiolitis; a safe and effective treatment in ordinary paediatric wards” from Knut Oymar and Kjersti Bardsen.

This paper provides interesting data on experience of CPAP in children with bronchiolitis in ordinary wards. The subject of CPAP in bronchiolitis is not original but the idea of performing CPAP in ordinary wards is subject to debate. This study concerns a small population so it is difficult to conclude that CPAP is feasible and safe in ordinary wards. That is the major concern of this paper. It is not because the authors did not observe complications in 53 patients (33 in ordinary wards) that mean that CPAP can be performed safely in ordinary wards. Moreover, details on the patients/nurses and patients/physicians ratios in the wards are not provided. We have to know how was performed the monitoring of the patients, how was organized the continuous monitoring and assessment of the children in the wards, during the day and the night. How were the nurses trained? To deliver CPAP in small infants specific training of the care providers are necessary. If the care providers are well trained and if the monitoring is continuous, with centralization return, CPAP is probably feasible and safe but the authors should provide these precisions in their manuscript and in their conclusion. The risk is not negligible because some of these infants can develop severe apneas, respiratory arrests, cyanosis, seizure due to hyponatremia, bacterial superinfection that require immediate intervention. If the monitoring is intermittent and if the patients/nurse ratio is high, the risk of a delayed intervention is high with a risk of cardiopulmonary arrest and severe hypoxemia. The monitoring by capillary PCO2 requires specific training as well. In pediatric hospitals, it is not sure that all the nurses are well trained to this technic.

Concerning the results of this study, it is interesting to note that the level of cPCO2 was higher in patients who required hospitalization in PICU compared to patients treated in ordinary wards. That would mean that this criteria may help to decide what patients can be managed in ordinary wards. Similarly experiences have been reported in other countries.

One of the main factor to consider when performing CPAP in infants with bronchiolitis, is the presence of not of apneas and the response to CPAP during the first hours. The authors should discuss these criteria in their discussion. Apnea and not improvement with CPAP are factors associated with intubation,
prolonged hospital stay and complications. We are surprised by the fact that the authors did not report any apnea in their patients.

We don’t know if the patients who failed to CPAP were placed on NIPPV before being intubated. In our experience some of them can be safely managed by NIPPV avoiding intubation.

The authors could better describe the 9 patients who failed to CPAP and were transferred to PICU to those who succeeded. It would be interesting to do so in order to better understand why some patients fail.

The conclusion and the title of the paper are excessive. The authors should temper their opinion because the sample is too small to conclude of a complete safety, the conditions to perform CPAP in ordinary wards are not mentioned, and because in some countries the care organization is different (patients nurse ratios...).