



## CPAP support should be considered as the first choice in severe bronchiolitis

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To the Editor:

We have read with interest the *European Journal of Pediatrics* article entitled “Using a high-flow nasal cannula provides superior results to OxyMask delivery in moderate to severe bronchiolitis: a randomized controlled study” [5].

We are surprised that the authors conclude that high-flow nasal cannula (HFNC) “should be the first choice for treatment patients admitted to the intensive care unit (ICU) with severe bronchiolitis”. We are seeing an increase in the use of HFNC in bronchiolitis, but it has not been scientifically proven to be a better treatment option. Nasal CPAP is currently the gold-standard respiratory support in moderate to severe bronchiolitis [1, 2, 6, 10].

Besides, we are surprised that there were no failures in HFNC group in their study in discrepancy with other studies. The current failure rate due to HFNC in bronchiolitis varies between 12 and 50% [7, 8, 11].

Milesi et al. published for the initial respiratory management of acute viral bronchiolitis in young infants a failure rate in 31.0% in the nCPAP group and 50.7% in the HFNC group [11].

HFNC has not been demonstrated to be equivalent or superior to non-invasive positive pressure ventilation in bronchi-

olitis [11]. Besides, CPAP is a relatively low-cost method to reduce failure from bronchiolitis [13].

In spite of all of this, clinicians are confused and quite rightly raising questions about what is the best treatment in moderate to severe bronchiolitis among the systems of non-invasive respiratory support, such as high-concentration face masks, HFNC, and CPAP.

So the question is, is this the end of CPAP or at least will its usage drop significantly in bronchiolitis in ICUs? In our opinion, the answer is no. It is important to remember that any given treatment may not suit every patient and it is necessary to individualize the treatment for each patient.

In our opinion, looking at the scientific evidence, CPAP is superior to HFNC. Our hope is that this letter will raise awareness about the potential benefits of CPAP in bronchiolitis, and encourage investment in CPAP delivery over HFNC, particularly in developing countries [4].

In non-developed countries, the role of CPAP has been studied in a few countries. Bubble CPAP (bCPAP) has been used successfully in countries where resources are limited [3, 9, 14].

Several observational and controlled clinical studies in non-developed countries have shown that effective respiratory support can be provided with CPAP for bronchiolitis, pneumonia, and other causes of moderate-to-severe respiratory distress [3, 9, 14]. Chisti et al., in their controlled study in Bangladesh, published that treatment failure and mortality were lower in the bCPAP group as compared to the low-flow oxygen therapy [3] and HFNC group [3, 12].

However, we hope that on the basis of these studies, the benefits of bCPAP are appropriate for widespread use in non-developing or developing countries due to the challenge in severely resource-constrained settings.

We conclude that CPAP should be used as a first choice for treating patients admitted to the ICU with moderate to severe bronchiolitis.

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## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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