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A randomised trial of high-flow nasal cannula in infants with moderate bronchiolitis

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This randomised trial found no evidence of lower rate of escalating respiratory support among patients receiving high-flow oxygen therapy admitted for a first episode of moderate bronchiolitis to the paediatric emergency department https://bit.ly/2xsvqJG

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ABSTRACT

Background: The objective was to determine whether high-flow nasal cannula (HFNC), a promising respiratory support in infant bronchiolitis, could reduce the proportion of treatment failure requiring escalation of care.

Methods: In this randomised controlled trial, we assigned infants aged <6 months who had moderate bronchiolitis to receive either HFNC at 3 $L \cdot kg^{-1} \cdot min^{-1}$ or standard oxygen therapy. Crossover was not allowed. The primary outcome was the proportion of patients in treatment failure requiring escalation of care (mostly noninvasive ventilation) within 7 days following randomisation. Secondary outcomes included rates of transfer to the paediatric intensive care unit (PICU), oxygen, number of artificial nutritional support-free days and adverse events.

Results: The analyses included 268 patients among the 2621 infants assessed for inclusion during two consecutive seasons in 17 French paediatric emergency departments. The percentage of infants in treatment failure was 14% (19 out of 133) in the study group, compared to 20% (27 out of 135) in the control group

(OR 0.66, 95% CI 0.35–1.26; p=0.21). HFNC did not reduce the risk of admission to PICU (21 (15%) out of 133 in the study group *versus* 26 (19%) out of 135 in the control group) (OR 0.78, 95% CI 0.41–1.41; p=0.45). The main reason for treatment failure was the worsening of modified Wood clinical asthma score (m-WCAS). Short-term assessment of respiratory status showed a significant difference for m-WCAS and respiratory rate in favour of HFNC. Three pneumothoraces were reported in the study group.
Conclusions: In patients with moderate bronchiolitis, there was no evidence of lower rate of escalating respiratory support among those receiving HFNC therapy.