



How can we provide true synchronization in synchronized NIPPV?

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Dear Editor:

I read with great interest the manuscript entitled “Work of breathing during HHHFNC and synchronized NIPPV following extubation” [2], in which the authors mention using SNIPPV in a protocol section. They state that synchronization was achieved via a flow sensor located at the “y” piece, just proximal to the nasal prongs [2]. The detection of breathing in neonates is indeed difficult if breathing signals are weak or are superimposed upon a leakage flow, and so in neonates, flow measurement requires additional techniques that are not commonly available in clinical settings when SNIPPV is used [5]. The currently available synchronization methods between the ventilator and the patient in SNIPPV include pneumatic capsules, pneumotachograph [1, 5], although synchronization should be obtained via a pneumotachograph when using a Giulia neonatal ventilator, as was the case in the present study [4].

Even if a flow sensor is used, synchrony between mechanical and spontaneous breath occurs only during inspiration, as the inspiratory times of the mechanical and spontaneous breaths may be different [3]. Particularly in extremely small preterm infants, inspiratory times can be very short, and it is not possible to provide synchronized ventilation for both inspiration and expiration [1, 5].

The authors state that the trigger level was set at 0.1 L/min for all infants, which is a very low level of trigger sensitivity. Trigger sensitivity set to the lowest level can lead to auto-triggering, and so there is a need to set the optimal level to avoid auto-triggering.

In conclusion, I am not sure synchronization was truly achieved in the manuscript. That said, a Cochrane meta-analysis reported that NIPPV reduces incidences of extubation failure and also the need for re-intubation within 48 h to 1 week more effectively than NCPAP [3]. Thus, the results of the study [2] can be considered valuable also with regard to non-synchronized nasal intermittent positive pressure ventilation.

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