

COMPARING HUMIDIFIED HIGH FLOW NASAL CANNULA (HHFNC) VERSUS NASAL CONTINUOUS POSITIVE AIRWAY PRESSURE (NCPAP) AS RESPIRATORY SUPPORTS AFTER EXTUBATION IN PRETERM INFANTS

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Background & aim: After Vapotherm HHFNC was discontinued, the other type of HHFNC (RT329 Infant Oxygen Delivery System) was introduced but there are few studies using this system. The aim of this study is to evaluate the effectiveness and safety of HHFNC as a mode of respiratory support after extubation for preterm infants compared with nCPAP.

Methods: This was a retrospective study of preterm infants supplied by HHFNC or nCPAP after extubation at Korea University Ansan Hospital. For short term effects, the change of heart rate, respiration rate and FiO₂ needed for respiratory stabilization were monitored. The rates of re-intubation/weaning within 72 hours after extubation were measured. The complication (localized nasal necrosis, localized nasal infection and air leak syndrome) after use were recorded.

Results: HHFNC group (n=23) and nCPAP group (n=23) had similar gestational age and birth weight. There were no significant differences of short term effects in both groups. The rate of re-intubation was 26% (6/23) in HHFNC group and 17% (4/23) in nCPAP group ($P=0.78$). The rate of weaning from the device was 39% (9/23) in HHFNC group and 48% (11/23) in nCPAP group ($P=0.52$). There were no statistically significant differences of complications in both groups.

Conclusions: Comparing HHFNC with nCPAP, there were the similar rates of re-intubation/weaning and no differences in adverse outcomes. HHFNC may be an effective and safe as a mode of respiratory support after extubation in preterm infants. However, well-designed random trial control studies are needed for clinical application.