



Heart Failure and Cardiomyopathies

CLINICAL EFFICACY OF HIGH-FLOW OXYGEN THERAPY THROUGH NASAL CANNULA IN PATIENTS WITH ACUTE HEART FAILURE

Poster Contributions

Poster Hall, Hall C

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Authors: *Min Gyu Kang, Hyun Woong Park, Jin-Sin Koh, Seok-Jae Hwang, Jin-Yong Hwang, Jong-Hwa Ahn, Yongwhi Park, Young-Hoon Jeong, Choong Hwan Kwak, Jeong-Rang Park, First Department of Internal Medicine, Gyeongsang National University School of Medicine, Jinju, South Korea*

Background: Acute heart failure (AHF) is commonly complicated with pulmonary edema following hypoxemia. High-flow oxygen therapy through nasal cannula (HFNC) is may offer an alternative to invasive ventilation in those patients with uncorrectable hypoxemia by conventional oxygen therapy. However, clinical efficacy and safety of HFNC is not well established in patients with AHF.

Methods: Patients with AHF who were refractory and progressive hypoxemia after oxygen supply by facial mask were included retrospectively. Exclusion criteria was followings as; cardiogenic shock, decreased mentality, high PaCO₂ for chronic respiratory failure. Patients with HFNC (n=52) and invasive ventilation (n=55) were reviewed respectively. Among patients with HFNC, 7 patients (13.5%) refused the invasive ventilation. The in-hospital outcome and physiological measurements were compared between 45 patients with HFNC and 55 patients with invasive ventilation.

Results: The initial APACHE II score and left ventricle ejection fraction were similar between two groups (HFNC vs. invasive ventilation; 16.4 ± 5.2 vs. 17.4 ± 4.5 , $p = 0.291$; $43.6 \pm 12.9\%$ vs. $40.9 \pm 12.4\%$, $p = 0.270$, respectively). There were no differences between the groups in mean atrial pressure, heart rate, respiratory rate and oxygen saturation level during the first 6 hour. Median dates of hospital stay was shorter in HFNC without statistical significance (8.0 day vs. 9.0 days, $p=0.274$). Median value of apply-duration of HFNC was significantly shorter than that of invasive ventilation (15.5 hrs vs. 43.1 hrs, $p=0.001$). Among patients with HFNC, 8 patients (17.7%) was experienced the transition to invasive ventilation. 37 patients (82.2%) of HFNC were successfully recovered from hypoxemia without endotracheal intubation. There was no significant difference in in-hospital mortality between the groups (5/45, 11.1% vs. 2/55, 3.6%, $p=0.145$).

Conclusions: This is the first observational study to evaluate the efficacy and safety of HFNC in patient with AHF by comparison with invasive ventilation. In selected condition, oxygen therapy with HFNC could be a safe and an alternative method for invasive ventilation.