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The Utility of High Flow Nasal Cannula Oxygen Therapy in a Pulmonology Ward; A Case Series

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Objectives: Some of the problems in the management of acute respiratory failure in a ward may be the inability to increase the FiO_2 in the inspiratory air in the hypoxemic respiratory failure, inability to reach the non-invasive ventilator and/or inability to find a place in the intensive care unit sooner. The high-flow nasal cannula (HFNC) is a recently developed oxygen therapy device in adult patients that can deliver a humidified and heated mixture of air and oxygen at a very high flow rate, generate positive airway pressure at end-expiration, reduce the work of breathing and the respiratory rate, and be more comfortable for patients. We would like to share our case series on the conditions we use HFNC in patients with acute respiratory failure in our pulmonology ward.

Methods: HFNC used in patients with acute respiratory failure in our pulmonology ward were retrospectively analyzed from the files.

Results: HFNC treatment was performed in 29 different episodes of 24 patients. In 24 patients, vital signs and blood gas analysis were performed prior to initiation of HFNC therapy and applied to patients with hypoxemic respiratory failure in the foreground. The mean age of the patients was 75 years and the mean duration of HFNC was 141 hours. HFNC were administered to cardiogenic pulmonary edema patients who did not accept non-invasive ventilation and borderline hypercapnia patients with COPD, although they were most commonly applied to patients with pneumonia and idiopathic pulmonary fibrosis. 8 of 29 episodes resulted in intensive care unit (ICU) transfer. Thirty-day mortality occurred in 11 of 24 patients, and 2 developed at home. 5 of the cases were cancer, 2 had idiopathic pulmonary fibrosis, 1 had pulmonary embolism, 1 had pneumonia in advanced age, 1 had COPD and 1 had multiple comorbidity. The data of 2 patients who underwent HFNC during the fiberoptic bronchoscopy procedure.

Conclusion: Many studies compared NIV and standard oxygen therapy for managing the patients with acute respiratory failure and less compared NIV versus HFNC and a very rare study of the use of HFNC in the ward. Studies comparing HFNC versus standard oxygen therapy and HFNC vs NIV during bronchoscopy should be increased. We recommend that considering the valuableness of intensive care beds, it is appropriate to increase the use HFNC for the end of life and the IPF patients with hypoxemic respiratory failure where standard oxygen therapy is insufficient in the ward settings.

Keywords: High flow nasal cannula oxygen, ward, fiberoptic bronchoscopy