Category : **Respiratory: airway management/CPAP**

A109 - *Do-not-intubate order and prolonged high flow nasal cannula therapy in patients with hypoxemic respiratory failure related to CoViD-19*

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Introduction:

High-flow nasal cannula (HFNC) therapy can reduce the need for mechanical ventilation and seems to lower mortality rates in patients affected by Coronavirus disease 2019 (CoViD-19) with hypoxemic respiratory failure (HRF). However, the effectiveness of HFNC therapy on mortality in these patients with a Do Not Intubate (DNI) order is unclear.

Purpose: Assess mortality in patients affected by HRF due to CoViD-19 with a DNI order treated with HFNC. Identify predictive factors for mortality in this cohort. Compare the use of HFNC and mortality between a first and second pandemic wave of CoViD-19.

Methods:

We retrospectively analyzed the medical records of all CoViD-19 patients with a DNI order that received HFNC in UZ Brussel between the 6th of March 2020 and the 1st of January 2021. Besides 30-day mortality, we focused on APACHE III score and P/F ratio at the start of HFNC. Furthermore, to evaluate an evolution in HFNC use, a comparative analysis was made between patients treated during the first and the second CoViD-19 wave.

Results:

57 patients treated with HFNC had DNI orders with a 30-day mortality of 84%. Higher APACHE III and lower P/F ratios at the start of HFNC were predictors for mortality. APACHE III scores higher than 47 had a positive predictive value for mortality of 97%. Survivors had a median APACHE III score of 45 (IQR 40-48). In the first wave, the duration of HFNC therapy was 3 (IQR2-5) vs. 6 (IQR3-10) days in the second, p:0.005. Mortality was comparable 85% vs. 84%.

Conclusion:

CoViD-19-patients with HRF and DNI orders treated with HFNC have high mortality. Patients in the second wave received significantly longer HFNC therapy compared to the beginning of the CoViD-19 pandemic, without improved survival. APACHE III at the start of HFNC is an early predictor for mortality with a high positive predictive value. In high APACHE scores with DNI orders, palliative care should be considered, as prolonged HFNC therapy does not improve the outcome.

Image :

Diagnostic accuracy of APACHE III score > 47 for prediction of mortality in CoViD-19 patients with DNI-orders

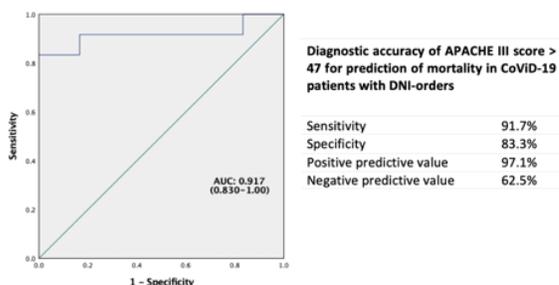|	
Sensitivity	91.7%
Specificity	83.3%
Positive predictive value	97.1%
Negative predictive value	62.5%

AUC: 0.917 (0.830-1.00)

Figure 1. ROC curve and diagnostic accuracy of APACHE III for prediction of mortality, applied to CoViD-19 patients with DNI orders; x-axis: 1-specificity; y-axis: sensitivity; AUC: area under the curve; 95% CI: 95% confidence interval