Category :**Respiratory: mechanical ventilation**

A191 - *Performance of access il-6 assay in predicting risk for mechanical ventilation in covid-19 patients*

N Robert [1] ; C Morales [2] ; A Mendoza [1] ; G Rocamora [1] ; C Garcia [2] ; MD Quesada [3] ; I Castro [4] ; D Careaga [4] ; R Magari [5] ; L Tejidor [4]

[1]Hospital Universitari Germans Trías i Pujol, Emergency Department, Badalona, Spain, [2]Hospital Universitari Germans Trías i Pujol, Laboratory Medicine Department, Badalona, Spain, [3]Hospital Universitari Germans Trías i Pujol, Microbiology Department, Badalona, Spain, [4]Beckman Coulter Inc., Clinical Affairs, Miami, United States, [5]Beckman Coulter Inc., Bioinformatics/Biostatistics, Miami, United States

Introduction:

The clinical study evaluated IL-6 measurements as an early indicator of disease progression and poor prognosis in patients with SARS-CoV-2 infection. Elevated IL-6 has been shown to identify patients at risk of hypoxemia and need for mechanical ventilation [1].

Methods:

A retrospective cohort study enrolled adults presenting to the Emergency Department (ED) between March 18 and May 4, 2020 with symptoms suggestive of COVID-19 and who were RT-PCR positive for SARS-CoV-2. All patients had blood samples drawn at ED presentation and tested with the Access IL-6 assay on Unicel DxI 800 immunoanalyzer (Beckman Coulter Inc.). Results of radiological studies and respiratory treatments (non-invasive and invasive mechanical ventilation, nasal cannula) were extracted from the medical charts. An IL-6 cut-off of 35 pg/mL based on literature was utilized for the analysis [1]

Results:

75 RT-PCR confirmed SARS-CoV-2 patients were initially enrolled. The prevalence of mechanical ventilation in this cohort was 32% with a median time from sample draw to mechanical ventilation of 4 days, and a mortality of 17%. 10 patients were excluded, as despite having severe hypoxemia, died before receiving mechanical ventilation. The median IL-6 levels were 26.21 (non-ventilated group) vs. 82.61 pg/mL in those receiving mechanical ventilation. ROC analysis of these 65 patients yielded an AUC of 0.800 (95% CI 0.695 – 0.905) for baseline IL-6 levels. At a cut-off of 35 pg/mL, IL-6 effectively differentiated COVID-19 patients who received mechanical ventilation, with a sensitivity of 95.2% (95% CI 77.3 – 99.2), specificity of 56.8% (95% CI 42.2 – 70.3), PPV of 51.3% (95% CI 36.2 – 66.1) and NPV of 96.2% (95% CI 81.1 – 99.3).

Conclusion:

The Access IL-6 assay is a highly sensitive marker to aid in determining the risk for intubation by mechanical ventilation in confirmed COVID-19 patients. This assay received Emergency Use Authorization from the US Food and Drug Administration.

References:

Herold T. J Allergy Clin Immunol. 2020 Jul;146(1):128-136