

Category : **Sepsis/septic shock: management**

A249 - Evaluation of endotoxin activity in critically ill patients with covid-19

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Introduction:

Current literature shows that an elevated endotoxin activity is often present in critically ill patients with COVID-19. SARS – CoV 2 spike protein can bind lipopolysaccharide (LPS) and may induce a “cytokine storm”.

At the same time, the COVID-19 trophism for the ACE2 receptor, which is expressed also in small intestinal enterocytes, may cause a “leak gut” syndrome altering intestinal permeability and promoting the LPS translocation.

OBJECTIVES

To evaluate endotoxin activity at the admission in Intensive Care Unit (ICU) and during ICU stay.

Methods:

We assessed the endotoxin activity assay (EAA), a rapid in vitro diagnostic test that utilizes a specific monoclonal antibody. (Estor, Italy). EAA was measured at the ICU admission (baseline), day 3 and day 7. EAA levels were distinguished in high (EAA > 0.6) and low (EAA < 0.6) endotoxin activity. Blood gas analysis, haemodynamic and breathing pattern parameters, were also recorded.

We also considered the infections developed during ICU stay and the inflammatory parameters.

Results:

The figure shows the % of patients with high and low EAA, respectively. Of the 40 patients enrolled, 14 had an elevated EAA at the first EAA determination. In this group the mortality was 57%. In the group of patients without preexisting elevated EAA the mortality was 42%. At baseline, we could not find any correlation between EAA and clinical, ventilatory and hemodynamic characteristics.

At day 3 and 7, lactates, presepsine and SOFA score kidney component values were significant higher in the group of patients with EAA > 0.06.

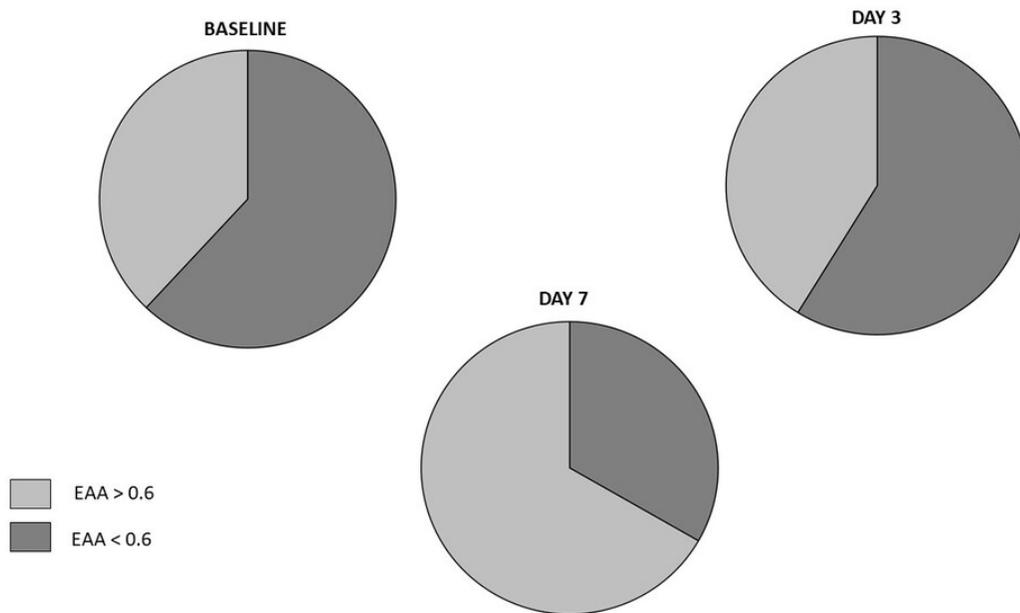
Conclusion:

We found that elevated EAA was 35%.

This raises the question if a “hypoperfusion”, hyperinflammatory state or a direct action of SARS – CoV 2 on small intestinal enterocytes may induce LPS translocation.

Further studies are needed to evaluate if high EAA at ICU admission may allow an early recognition of patients with worse ICU outcome.

Image :



% of patients with EAA high and low, respectively during the three days of the study