

Category : **Cardiovascular: Other**

A220 - Prognostic value of novel sepsis biomarkers in adult patients undergoing va-ecmo for cardiocirculatory shock

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Introduction:

Although sepsis is one of the major factors affecting VA-ECMO patients' outcomes, its diagnosis is problematic because of the inflammatory cascade provoked by extracorporeal support. The study aims to investigate the capacity of current (PCT) and novel biomarkers (Presepsin) to predict both severity of illness and mortality in VA-ECMO patients

Methods:

We performed a prospective single-center observational study of adult patients undergoing VA-ECMO following refractory cardiocirculatory shock, admitted to the Cardiothoracic ICU, University Hospital Of Verona, Italy.

Subjects underwent daily plasmatic samples for dosage of Procalcitonin (PCT) and P-SEP(sCD14-ST) during the total duration of five days from VA-ECMO cannulation. Blood cultures and tracheal aspirates were also collected daily. SOFA score was also assessed daily as the index of illness severity. The outcomes were considered in-hospital mortality and global illness severity. Sepsis was defined as the presence of both SOFA score >7 and bacterial on any cultures

Results:

A total of 19 patients were enrolled in the study with a mean age of 58±12 years. The average SOFA score was 11.2 (95% CI; 9.2-13.2). The majority (74%) met our sepsis criteria. In-hospital mortality was 32%.

Median PCT levels were significantly higher in patients with sepsis (11.4±10 ng/ml Vs. 2.6 ±13 ng/ml, $p=0.001$). The same relationship was observed for P-SEP(1410 pg/l Vs.685 pg/l, $p=0.01$). Strong correlation was observed between the first 24h SOFA score and P-SEP ($r=0.95$; $p>0.001$) than PCT($r= 0.48$; $p=0.035$).

ROC curve analyses were performed. At chosen cut-off values, PCT and P-SEP accurately predict mortality in VA-ECMO patients (Fig.1) but was inaccurate for sepsis (P-SEP, AUC 0.36)

Conclusion:

In ours VA-ECMO patients, PCT and P-SEP were not able to predict sepsis. Instead, these biomarkers were strongly related to the severity of multi-organ dysfunction, and mortality. In particular, P-SEP was strongly associated with illness severity

Image :

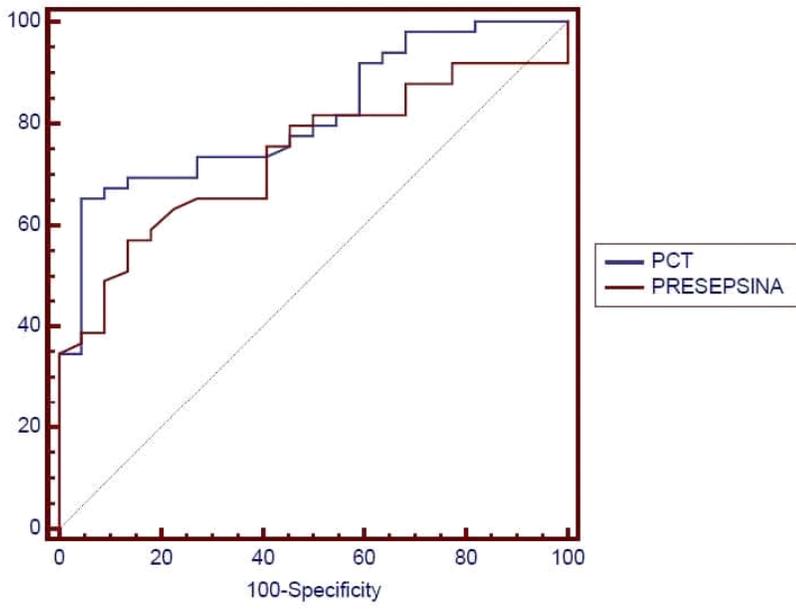


Figure 1. Receiver operating characteristic curves of P-SEP and PCT level in predicting patients' mortality (PCT, AUC 0.815, P-SEPS, AUC 0.736).