

Potentially inadvertent use of norepinephrine due to immunomodulation in septic patients.  
Luis Huespe, Silvio Lazzeri, Carlos Mizdraji, Juan Melana, Renzo Gorostegui, Mónica Auchter, Lilian Ojeda Flores, Lucrecia Solís, Karen Velázquez, Matías González and Juan Pablo Rodriguez  
Intensive Care Unit, San Martín School Hospital. Rivadavia 1250 Corrientes-Argentina  
Laboratory of Biochemical Investigations (LIBIM) School of Medicine, UNNE. CP3400

### **Objective**

Proinflammatory mediators are related to the early phase of sepsis, however it is clear that many patients do not die from an overexpressed inflammatory response and many others present a stage of immunosuppression that leads to persistent superinfection in late phases of the critical process. The first objective of the study was to recognize Norepinephrine as potentially inducing immunoparalysis and secondly to evaluate survival at 7 days.

### **Methods**

Recent studies from our laboratory evaluated the immunomodulatory activity of Norepinephrine in cell cultures in vitro and given that previous studies on the quantification of cytokines (2018) we reanalyzed serum at -80 and the raw data. All patients with Sepsis-3 included in the study, epidemiological data, SOFA, proinflammatory cytokines evaluated RT-qPCR, PCT, lactate and primary site of infection, day of mechanical ventilation, dose norepinephrine 5µg/m and standard care. From the group of patients who survived and who received Norepinephrine, we analyzed the presence of immunoparalysis, the ratio of the IL10/TNFα index, IL6 and other previously requested determinations, and survival at 7 days.

### **Results**

The study included 54 patients with diagnosis of Sepsis-3, mean age 44.2 years, SOFA 7.3, days of ventilation 9.1 and overall mortality 53.8%. A subgroup of 23 patients with 7-day survival who received norepinephrine at different doses 17 patients with septic shock and 6 patients with Sepsis-3 Lactate 2.28 vs 1.75, Nt ProBNP 2890 vs 1436 IL10/TNF ratio 18.9 vs 71.30.

### **Conclusion**

This subgroup showed a significant decrease in IL6 and TNFα by induction of polarization to M2 macrophages as demonstrated in vitro. It is time to use biological markers when moving from a proinflammatory phase to a hemodynamic recovery phase where lower doses of norepinephrine should be considered.