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Introduction

Septic shock is a severe syndrome with high mortality, characterized by significant multi-organ dysfunction and early acute kidney failure. This condition is caused by an excessive and dysregulated inflammatory response of the body to infectious agents, primarily bacteria.

Methods

65-year-old female, depressive syndrome, no allergies.

Sepsis due to urinary lithiasis, progressed to septic shock.

In Intensive Care Unit started intensive therapy with effective respiratory exchange and hemodynamics supported by amines (norepinephrine 0.9 mcg/kg/min) and vasopressin (0.03 IU/ml).

Early initiation of CRRT (Continuous Renal Replacement Therapy) and extracorporeal hemoadsorption using Alteco and Cytosorb filters:

- CVVHD with citrate for 144 hours (72 h + 72 h) + extracorporeal hemoadsorption with 1 Alteco filter for 6 hours and 1 Cytosorb filter for 9 hours + an additional Cytosorb filter for 15 hours
- Qb: 125 ± 32 ml/min, Qd: 2033 ± 201 ml/h, U.F.: 0
- Citrate dose: 3.2 ± 0.4 mmol/l, Calcium dose: 1.9 ± 0.3 mmol/l
- CVVHDF with citrate for 140 hours (72 h + 68 h)
- Qb: 128 ± 40 ml/min, Qd: 2766 ± 100 ml/h, infusion: 1511 ± 30 ml/h, U.F.: 0
- Citrate dose: 4.7 ± 0.2 mmol/l, Calcium dose: 1.6 ± 0.1 mmol/l

Results

On admission to ICU: Blood pressure: 70/44 mmHg, Mean arterial pressure: 55 mmHg, Heart rate: 110 bpm. SAPS-II: 40, SOFA score: 15, Oligo-anuria with acute kidney injury. At discharge: Blood pressure: 154/71 mmHg, Mean arterial pressure: 101 mmHg, Heart rate: 80 bpm. Diuresis and GFR preserved

	Creat mg/dl	GFR ml/min	K mmol/l	Hb g/dl	PLT	PCR mg/l	ATIII %	Procalcitonin ng/ml	Lactate mmol/l	HCO3 mmol/l
T.I. (IN)	2.5	20	3.4	11.5	80.000	32.3	60	216	17	12.6
T.I. (OUT)	0.8	90	3.9	13.7	300.000	12.6	100	0.16	1.6	25.9

Conclusion

The early use of CRRT with high cut-off filters and extracorporeal hemoadsorption with filters specific for lipoproteins and pro- and anti- inflammatory cytokines improves the prognosis and outcome of patients in septic shock, allowing for greater and faster modulation of the cytokine cascade, better restoration of homeostasis and hemodynamic stability, early discontinuation of vasopressors (fig.1), and preservation of renal function and diuresis.

Figure 1: Noradrenaline and Argipressin trend

