Use of Cytosorb in a patient with septic and cardiogenic shock by fulminant autoimmune myocarditis.

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INTRODUCTION

Sepsis is defined as a dysregulated host immune response to microbial invasion leading to end organ dysfunction and shock. Acute kidney injury (AKI) is a frequent complication, often requiring renal replacement therapy. Also, hemoadsorption using CytoSorb® has gained attention as a potential immunotherapy to control systemic inflammation and sepsis. We report a case of a young patient affected by adult-onset Still's disease with a severe and cardiogenic septic shock and AKI, that was successfully early treated by a combination of Sustained Low Efficiency dialysis (SLED) and hemoadsoption with CytoSorb®.

METHODS

A 27-year-old man was admitted to hospital for fever, after being treated at home with antibiotic and antipyretic therapy, without clinical improvement. His medical history included arthralgias and skin manifestations. On admission he presented with hypotension, renal failure, liver failure, leukocytosis and elevated plasma levels of inflammatory markers; he was transferred to the intensive care unit. In the following hours the patient clinical conditions deteriorated, and he manifested acute respiratory failure, anuric AKI, elevated lactate, SOFA SCORE 19, cardiac dysfunction; the patient underwent coronarography (which showed no coronary disease), and a myocardic biopsy. An intra-aortic balloon pump (IABP) was placed, and the patient received life support and renal support dialysis in combination with hemoadsorption using CytoSorb®. Three Cytosorb® plus SLED sessions of 24 hours were performed in the first three days, followed by three dialysis session of 12 hours with SLED alone and another Cytosorb® and SLED session of 24 hours. Blood culture demonstrated MRSA infection, then antibiotic treatment was started, and histological examination of the myocardium showed autoimmune myocarditis, for which hydrocortisone therapy was started.

RESULTS

The three first and consecutive sessions of hemoadsorption resulted in an improvement of the hemodynamic: increase blood pressure (BP), reduction of lactate, tapering of vasopressor dosage (norepinephrine, epinephrine and vasopressin) and partial recovery of the renal function. After three dialysis sessions, procalcitonin (PCT) increased, then another Cytosorb® and SLED session of 24 hours was performed, with complete recovery of renal function.

CONCLUSIONS

Early dialysis treatment with SLED in combination with hemoadsorbtion (Cytosorb®) could help improve the hemodynamic conditions and renal recovery in patients with septic and cardiogenic shock and AKI.