

Extracorporeal Detoxification and Immunocorrection in the Treatment of Severe Forms of Acute Respiratory Distress Syndrome

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ABSTRACT

Introduction: Acute respiratory distress syndrome (ARDS) – rather frequent and severe complications of acute viral bacterial pneumonia and other diseases. ARDS is the major causes of unfavorable outcomes, despite the use of most modern medicaments. Our previous experimental studies have demonstrated that endotoxemia is the main cause of pulmonary parenchyma damaged with development of acute respiratory insufficiency, multiple organ failure and death in ARDS.

Patients & Methods: We analyzed the therapy of 153 RDS patients: 67 patients received the conventional therapy only (antibiotics and other drugs, and in severe degree of RDS - mechanical lung ventilation). Seventy patients received an additional detoxification therapy-hemosorption or plasma exchange (membrane plasmapheresis with “Hemofenix” device end exchange 1.5-2.5 l of plasma). Ten patients with extremely severe RDS were underwent the extracorporeal membrane oxygenation of the blood (ECMO) with hemosorption.

Results: In patients with severe ARDS and only conventional therapy the lethality level attained 73.33% while additional performing of hemosorption or plasma exchange allowed to decrease it to 31.03%. Using ECMO during from 15 to 44 h with 3-4 hemosorption procedures allowed to save 7 of 10 these patients.

Conclusion: The most powerful antibiotic do not eliminate the endotoxines. Medicament immune stimulation is also unable to restore suppressed mechanisms of immune defense. Under these conditions is pathogenetically well-founded conducting of a extracorporeal detoxification therapy based on hemosorption and plasma exchange with compensation of removed volume with donor plasma. It seems to us that this tactic is most acceptable in the treatment of severe ARDS corona viral etiology also.

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