The Joint Meeting of

The 12th World Congress of International Society for Apheresis

ISFA2019

The 40th Annual Meeting of Japanese Society for Apheresis

JSFA2019

Program & Abstracts

Date : October 17(Thu)-20(Sun), 2019

Venue : Kyoto International Conference Center, Kyoto, Japan

Congress President : Yoshihiro Endo, MD, PhD

Professor, Department of Clinical Nursing, Shiga University of Medical Science

President, ISFA

INTERNATIONAL SOCIETY ISFA FOR APHERESIS

ISFA JSFA 2019 in Kyoto

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Poster Presentation 6 Critical Care Medicine

PP6-01 LPS adsorption with Toxipak columns in treatment of sepsis

Alexey A. Sokolov[1], Svetlana N. Gubanova[3], Alexey V. Popov[4], Leonid L. Gendel[2], Maxim V. Sudakov[3]

1) *The Department of Anesthesiology and Reanimatology, North-Western State Medical University named after I.I.Mechnikov, St.Petersburg, Russia*
2) *Clinical Hospital #122 named after L.G.Sokolov, Federal Medical and Biological Agency, St.Petersburg*
3) *St.Elizabeth City Hospital, St.Petersburg*
4) *City Hospital #40 Kurortny district, St.Petersburg*

LPS adsorption is the effective sepsis treatment. The purpose of this study was to evaluate the effectiveness of the Toxipak columns (POCARD Ltd. Russia) for the LPS adsorption.

Materials and methods: The study included 25 patients aged 34-75 years with abdominal(19), urological(4), pulmonological(1) and gynecological(1) sepsis. 9 patients were in septic shock. The

SOFA score was 9.5±0.9 (from 5 to 20). The perfusion rate was 60-100 ml/ min; the perfusion volume was 1.5-2 of the calculated blood volume. The blood was stabilized by heparin or heparin + sodium citrate. In 20 patients 1 session of LPS adsorption was performed, in 5 patients - 2 LPS adsorptions. We have investigated the SOFA score, body temperature, heart rate, PO2/FiO2 index, diuresis, cellular and biochemical blood composition, endotoxin concentration (Hycult biotech, Netherlands), CRP, PCT, IL6, IL8, IL1, TNF (ELISA, Vector Best, Russia).

Results: The next morning after LPS adsorption SOFA score significantly decreased from 9.5±0.9 to 6.9±1.0, the body temperature - from 38.08±0.20 to 37.11±0.16; HR - from 106.4±3.5 to 92.7±2.5, the PO2/FiO2 index increased from 228.7±16.4 to 270.6±17.4; diuresis - from 1593±242 to 2357±358ml/day, the endotoxin level significantly decreased from 2.88±0.43 to 1.20±0.19 EU/ ml, CRP - from 275.1±45.5 to 223.9±35.6 mg/l, PCT - from 66.1±8.7 to 29.8±7.8 ng/l, IL6 - from 234.0±32.1 to 73.8±21.3 pg/l. In patients with septic shock norepinephrine doses were reduced from 0.45±0.11 to 0.19±0.07 mcg/kg/min and then to zero. Concentration of pathogenetic molecules decreased direct after Toxipak column: endotoxin (60-38%), CRP (37-19%), IL1 (65-28%), IL8 (59-27%). No serious adverse reactions to the procedures were observed. The positive clinical effect was obtained in all 25 patients. But 3 people died in the ICU at 2-3 days after LPS adsorption. 22 patients were transferred from the intensive care unit.

Conclusions: Toxipak columns effectively remove endotoxin (LPS) from the blood and improve clinical and laboratory parameters of patients.