Introduction:
Removal of activated leukocytes and endotoxin from the blood is a complex therapeutic effect of the device for removing endotoxin.

Methods:
In the main group (16 patients with abdominal septic shock) after surgery, the traditional treatment was supplemented with two sessions of endotoxin removal (2 hours each with an interval of 24 hours) using “Alteco LPS adsorber” (Sweden). The control group consisted of 8 patients with a similar diagnosis and only traditional treatment.

Results:
28% of white blood cells were adsorbed in LPS adsorber. Among them, granulocytes (35%) were maximally extracted, then CD14⁺ monocytes (CD14⁺ Mo) (33%), HLA-DR⁺ mononuclear cells (6%), monocytes (2%). IL-6, IL-10, procalcitonin (PCT) were not adsorbed. The 28-day mortality rate in the main group was 50% and was lower compared to the control group - 75%. During monitoring, in the main group 24 hours after the first removal of endotoxin, a decrease in the initially increased amount of activated CD14⁺ Mo by 2.2 times, as well as functionally mature defensin⁺ granulocytes (def⁺ Gran) by 1.6 times was observed. IL-6, IL-10, and PCT decreased by 1.9; 17.8; and 1.2 times, respectively. During this period, the control group showed an increase in CD14⁺ Mo and def⁺ Gran, while IL-6, IL-10 did not change, and PCT increased 1.9 times. A day after the second removal of endotoxin and then 5 days later, the main group of IL-6, IL-10, and PCT continued to decline. In the control group, only IL-10 decreased after 3 days, the rest continued to grow.

Conclusion:
The cellular adsorption of endotoxin-bound CD14⁺ Mo and mature def⁺ Gran is an important part of the mechanism of action of the endotoxin removal device.