

The influence of the type of general anesthesia on themyocardial function
and inflammatory response in the elderly

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Background and Goal of Study: The issue of prevention of cardiac complications during non-cardiac elective surgery in elderly is an actual problem. Decompensation of cardiac function in elderly may be cause of postoperative lethality, significantly increase the duration and cost of treatment. However, cardiac decompensation can be caused not only by the presence of concomitant cardiac diseases, but by inflammatory changes, initiated by surgery and anesthesia. The goal of study was to evaluate cardiovascular condition in elderly after intravenous versus volative anaesthesia and define the relationship with markers of Inflammatory Response.

Materials and Methods: We examined 40 patients aged 60 to 82 years for abdominal surgery with total intravenous or volative anesthesia. There were representative of the gender, age, ASA, Euroscore. TNF, IL-6, IL-10 in EDTA-plasma determined by enzyme immunoassay (set Biomedica) (1) preoperative, (2) 1-st day, (3) 5-s day. To control the cardiovascular condition we used echocardiography, ECG-monitoring and central hemodynamics analysys by thoracic rheography. As a marker of myocardial damage was used troponin I by cytotest. Data are presented as $M \pm m$, statistically significant value of $p < 0,05$).

Results and Discussion: Echocardiography did not show significant changes of the main parameters in patients during of the perioperative period. Baseline hemodynamic parameters were not statistically significantly different. In the group after total intravenous anesthesia were significant afterload reduction with a significant tachycardia. Inhalation anesthesia due moderate and gradual decrease

in afterload without developing tachycardia and stable mean blood pressure.

After anesthesia, the level of IL6 in the group with intravenous anesthesia was significantly higher and increased near to 2651% ($p = 0.002$). TNF alpha also increased significantly in the group with intravenous anesthesia from 1 day and slightly decreased by 5 days. The concentration of anti-inflammatory cytokine 10 increased in inhalation group. In several patients with intravenous anesthesia, we also found a positive troponin unchanged on the ECG.

Conclusions: The use of inhalation anesthesia in the elderly allows maintaining central hemodynamic parameters in optimal mode, accompanied reduction of markers of inflammatory response, as well as the absence of a marker of myocardial damage.