THE IMPORTANCE OF PLASMAPHERESIS IN THE TREATMENT OF PATIENTS WITH DIFFUSE PERITONITIS

Xasanov Sh.N.
Andijan State Medical Institute
Assistant of the Department of Anesthesiology, Reanimatology and Emergency Medicine Andijan, Uzbekistan.

Purpose of the study: To improve the effectiveness of treatment in patients with diffuse peritonitis through the use of plasmapheresis (extracorporeal detoxification), to prevent complications in the immediate treatment outcomes, and to apply optimal methods of intensive therapy. The study also aims to develop optimal therapeutic plasmapheresis methods and include them in комплекс therapeutic management in order to reduce postoperative complications and mortality in patients with diffuse purulent peritonitis complicated by sepsis.

Materials and Methods: A retrospective and prospective analysis was conducted on 85 patients diagnosed with generalized secondary peritonitis who received treatment at the Andijan branch of the Republican Research Center of Emergency Medicine during the period from 2023 to 2026. All patients included in the study had severe forms of diffuse peritonitis requiring urgent surgical intervention and intensive postoperative management. The patients were divided into two clinical groups depending on the treatment strategy used. Comparative evaluation of the groups was carried out according to the extent of pathological changes in the abdominal cavity, severity of the inflammatory process, degree of endogenous intoxication, and the stage of peritonitis. The main group consisted of 56 patients in whom relaparotomy was performed within 48 hours according to a specially developed treatment algorithm. This

approach included early surgical reassessment of the abdominal cavity, repeated sanitation procedures, drainage control, and intensive postoperative monitoring combined with extracorporeal detoxification methods. The comparison group included 29 patients who underwent repeated surgical interventions only on an "on-demand" basis. In these patients, relaparotomy was carried out only after clinical, laboratory, or instrumental signs indicating progression or recurrence of peritonitis appeared in the abdominal cavity. All patients received comprehensive intensive care therapy, including infusion-transfusion therapy, broad-spectrum antibacterial treatment, correction of electrolyte imbalance, respiratory support when indicated, and hemodynamic stabilization measures. In selected severe cases accompanied by sepsis and pronounced endotoxicosis, plasmapheresis was used as an extracorporeal detoxification method in order to reduce circulating toxins, inflammatory mediators, and systemic intoxication. The effectiveness of treatment was assessed according to several clinical criteria, including postoperative mortality, frequency of complications, duration of stay in the intensive care unit, total length of hospitalization, and the overall dynamics of the patients' clinical condition during the postoperative period.

Results and Discussion: In patients with diffuse peritonitis, the application of a planned relaparotomy strategy based on a differentiated clinical approach demonstrated a significant improvement in treatment outcomes. In particular, the overall mortality rate in the main group was reduced by 1.7 times compared to the comparison group, decreasing from 51.3% to 30.2%, which was statistically significant ($p=0.001$). This marked reduction in mortality indicates the effectiveness of early and systematically planned surgical re-interventions in controlling the source of infection and limiting the progression of abdominal sepsis. The observed improvement in survival rates can primarily be explained by better control of the intra-abdominal infectious process. Early relaparotomy allowed for timely detection and elimination of residual purulent

foci, effective sanitation of the abdominal cavity, and adequate drainage, which collectively reduced the burden of bacterial contamination and endotoxemia. As a result, the systemic inflammatory response was attenuated, leading to a decrease in the severity of sepsis-related complications. Furthermore, the reduction in mortality was closely associated with a decrease in pathological consequences of abdominal sepsis, including progressive endotoxemia, microcirculatory disorders, and organ hypoperfusion. These factors are known to play a crucial role in the development of multiple organ dysfunction syndrome (MODS), which is the leading cause of death in patients with diffuse peritonitis. By interrupting the progression of these pathological mechanisms, the proposed algorithm contributed to improved clinical stability in the early postoperative period. At the same time, the use of this relaparotomy algorithm did not show a statistically significant effect on the overall frequency of postoperative complications. Complications such as wound infection, residual abscess formation, and transient organ dysfunction were still observed in both groups at comparable rates. This suggests that while the timing and strategy of surgical intervention significantly influence survival, they may not fully eliminate the risk of secondary complications associated with severe systemic infection and immune response dysregulation. Additionally, no significant reduction was observed in the duration of multiple organ failure syndrome. The persistence of organ dysfunction in critically ill patients indicates that, despite effective surgical source control, systemic inflammatory and metabolic disturbances continue to play a major role in the postoperative course. This highlights the importance of combining surgical strategies with comprehensive intensive care measures, including advanced detoxification techniques such as plasmapheresis, targeted antibiotic therapy, and organ support systems.