

Infection and the resulting sepsis continue to be important causes of morbidity in surgical patients. Cytokine network causes activation of neutrophils and vascular endothelium with increased upregulation of adhesion molecules, setting at a train of pathogenic inflammatory reactions in the host. Increased concentrations of inflammatory cytokines observed in the initial phase of postoperative complications have a great significance in forecasting a potentially fatal outcome of the disease and can be used for an early diagnosis of systemic complications. Prospective, clinical trial. Levels of cytokines, procalcitonin (PCT), leptin and acute phase proteins (APP) were measured before and after the operation (planned resection of colorectal cancer) and compared with levels in sepsis. Cytokine levels were measured by ELISA method. APP were estimated by nephelometric analysis. PCT was measured by immunoluminometric analysis. During the first 24 h after the planned resection of colorectal cancer there was a significant increase in serum concentration of interleukin (IL)-6 which declined in next 48 to 72 h. Serum concentration of tumor necrosis factor (TNF) was the highest between 18 to 24 h after the operation. IL-1 had a stable serum concentration without significant elevation. Serum concentration of IL-8 rose after 36 to 48 h. The first APP that could be detected are CRP and 1- antitrypsin, both reach the highest levels 72 h after the operation. We demonstrate statistically significant elevation of plasma leptin concentration 24 h after surgery compared with preoperative status. Leptin levels 48 and 72 h after surgery quickly returned to status before operation. As compared with other anti-inflammatory markers (cytokines, acute phase proteins), the attained plasma levels during extensive but uncomplicated surgery are by orders lower than maximal levels during sepsis.