Abstract: Sepsis is still a major cause of postoperative morbidity and mortality. Numerous biochemical indicators have been evaluated regarding their potential in predicting prognosis in sepsis. Generally, one must differentiate between indicators: those for preoperative detection of patients at risk for lethal sepsis and those for early prediction of lethal outcome of septic complications. The first include the analysis of mononuclear phagocyte interleukin (IL)-12-synthesizing capability. Reduced IL-12 levels were associated with higher lethality. Cytokine-associated gene polymorphisms such as the loss of monocyte HLA-DR expression and homozygotism for the tumor necrosis factor B2 allele have a place in preoperative risk evaluation, as they were associated with worse prognosis in sepsis. Among the most important biochemical indicators for early prediction of lethal outcome in sepsis are decreased L-selectin and elevated IL-18, IL-6, and PCT plasma concentrations. Increased nuclear factor kappaB activity in mononuclear phagocytes and elevated calcitonin gene-related protein plasma concentrations were associated with unfavourable prognosis.