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MODERN PRINCIPLES IN THE MANAGEMENT OF SEPSIS IN SURGICAL PATIENTS

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Sepsis remains a major cause of morbidity and mortality among surgical patients, particularly in the context of postoperative infections, trauma, and invasive procedures. It is defined as a life threatening organ dysfunction resulting from a dysregulated host response to infection, with progression to septic shock characterized by persistent hypotension and high mortality. Modern management strategies emphasize early recognition, rapid intervention, and a multidisciplinary approach to improve clinical outcomes.

A cornerstone of current sepsis management is early identification, which significantly reduces mortality. Clinical tools such as the quick Sequential Organ Failure Assessment (qSOFA) and National Early Warning Score (NEWS) are widely used to detect early deterioration in surgical patients. In addition, biomarkers such as serum lactate and procalcitonin provide valuable support in early diagnosis and risk stratification. Surgical patients, particularly those with recent operations or indwelling devices, are at increased risk, necessitating vigilant monitoring.

Early goal directed therapy, particularly fluid resuscitation, is a fundamental principle. Current guidelines recommend the administration of approximately 30 mL/kg of crystalloid fluids within the first three hours of diagnosis to restore intravascular volume and improve tissue perfusion. Continuous assessment of fluid responsiveness using dynamic parameters is essential to avoid both hypoperfusion and fluid overload.

Prompt initiation of empirical broad spectrum antimicrobial therapy within one hour of suspected sepsis is another critical component. There is a substantial correlation between delayed antibiotic administration and higher mortality. In surgical patients, antimicrobial therapy must be complemented by source control, including drainage of abscesses, debridement of infected tissue, or removal of contaminated devices. Subsequent de-escalation based on culture results is essential to reduce antimicrobial resistance.

In cases of persistent hypotension, hemodynamic support becomes necessary. Vasopressors such as norepinephrine are recommended to maintain adequate mean arterial pressure, while inotropic agents may be used in patients with myocardial dysfunction. These interventions are particularly relevant in critically ill surgical patients with septic shock.

The role of multidisciplinary care is increasingly recognized in modern sepsis management. Effective collaboration among surgeons, intensivists, nurses, pharmacists, and other healthcare professionals ensures timely intervention, optimized antimicrobial use, and comprehensive supportive care. Nurses play a pivotal role in continuous monitoring, early detection of deterioration, fluid balance management, and patient education.

Despite advancements, challenges such as delayed recognition, antibiotic resistance, and resource limitations persist. Emerging approaches, including advanced monitoring techniques, personalized treatment protocols, and integration of artificial intelligence for early warning systems, hold promise for improving outcomes in surgical sepsis patients.

In conclusion, modern principles in the management of sepsis in surgical patients focus on early recognition, rapid resuscitation, timely antimicrobial therapy, effective source control, and coordinated multidisciplinary care. Adherence to evidence-based guidelines such as the Surviving Sepsis Campaign remains essential for reducing mortality and improving recovery in this high risk population.