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INTENSIVE CARE OF THE SEPTIC PATIENT

“Infection” means a disease that is caused by bacteria or a virus (or other micro-organisms). Most infections are limited locally to a part of the body or are otherwise mild, but some become dangerously severe. According to the recently updated definitions, “sepsis” means *“life-threatening organ dysfunction caused by a dysregulated host response to infection”* (Singer et al. 2016). In other words, sepsis is a serious illness that arises when the body’s response to an infection is so strong that it causes organ dysfunctions and threatens to damage the body. Septic patients have a higher risk of death than e.g. patients with ST-elevation myocardial infarction (Singer et al. 2016).

The following steps are the essentials of treating a septic patient:

1. Prompt recognition of sepsis is the mainstay of treatment.
2. Act without delays! Sepsis is an emergency that must be dealt with immediately.
3. Take the following laboratory samples: Blood gas analysis, lactate, electrolytes, glucose; haemoglobin, blood cell count; CRP; creatinine, bilirubin, INR, blood culture, and, depending on the clinical presentation, cultures from other possible sources of infection (urine, tracheal aspirate, pus from abscesses, wound secretions, cerebrospinal fluid, ...)
4. Ensure enough staff is available so that monitoring, treatments, and investigations can be managed promptly.
5. Start fluid resuscitation immediately. Most clinicians recommend using either Ringer’s solution or a balanced crystalloid. Saline (NaCl 0.9%) can probably be used as well, but some are worried about possible harmful effects of hyperchloremia caused by large doses of saline. The passive leg raising test is a good test to assess fluid responsiveness: when elevation of the legs doesn’t improve the hemodynamics, the patient will probably not benefit from any more resuscitation fluids.
6. Adequate antibiotics must be given quickly (within 1 h of meeting a high risk patient). If possible, take the blood culture before giving antibiotics, but taking microbiological samples should not delay the initiation of antibiotic therapy.
7. Support tissue perfusion and oxygenation with vasoactive medication and ventilator treatment as needed. The main goals are good oxygenation, correction of lactic acidosis and good urine output.
8. Search for the source of infection and adjust treatments accordingly (including surgery in case of bowel wall perforation, drainage of abscesses, etc.). A careful clinical examination is the first step, but radiological investigations are also essential (chest X-ray is basically always needed, and a CT scan of the chest and abdomen is quite often necessary as well). For septic patients in intensive care, the sources of infection are most commonly in the lungs or abdomen. Skin and soft tissue infections are also common, as are infections originating from the urinary tract. Many other potential sources also exist (central nervous system, oral cavity, vascular devices, etc.).

References:

Singer M et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA 2016; 315(8): 801-810.