

B is for Bacteremia

Bacteremia is the presence of viable bacteria in the circulating blood. Not all circulating bacteria are harmful and transient bacteremia often follows dental work and minor medical procedures. The concern with any transient bacteremia is that it can progress to a more severe local or systemic infection if left untreated. Serious infections such as pneumonia (lung), septic arthritis (joint), osteomyelitis (bone), cellulitis (skin), meningitis (nervous system), and sepsis (blood), can result in death.

Most attorneys are familiar with symptomatic bacteremia known as bacterial sepsis. Sepsis is commonly defined as the presence of infection in conjunction with the systemic inflammatory response syndrome (SIRS), with severe sepsis understood as sepsis complicated by organ dysfunction and septic shock (circulatory failure characterized by very low blood pressure).

True sepsis is a common cause of hospitalization. It is commonly seen in the elderly following urinary tract obstruction or severe urinary tract infections or upper respiratory tract infections. Patients who have diabetes, systemic lupus erythematosus (SLE), or alcoholism or who are taking steroids are at a high risk for bacteremia.

Bacterial sepsis is not a random occurrence and is often associated with other conditions such as perforation of the bowel, renal infections (pyelonephritis), acute prostatitis, overwhelming pneumococcal infection, and by introduction of bacteria into the blood stream by introduction of an IV catheter or infusion of IV fluids.

Definitive diagnosis of sepsis requires these elements: 1) Clinical identification of infection in a patient who meets the clinical criteria for SIRS. SIRS is defined by the presence of 2 or more of the following clinical signs: temperature > 101 or < 96.8 ; heart rate >90 ; rapid breathing >20 breaths per minute; $PCO_2 < 4.3$; hyperglycemia or glucose >120 in the absence of diabetes; acutely altered mental status; white blood cell count (WBC) $>12,000$ or $< 4,000$ or a normal while blood cell count with $>10\%$ bands. 2) SIRS is present in a patient and the cause is thought to be an infection. 3) Severe sepsis leads to dysfunction of one or more organ systems such as kidney failure, respiratory failure, liver failure or circulatory failure.

The prognosis depends on the underlying health status of the patient, prompt surgical drainage of abscesses, and relief of any obstruction of the intestine or urinary tract, and appropriate and early empiric antimicrobial therapy with the drug spectrum to the presumed septic source. Again, early and appropriate empiric antimicrobial therapy and surgical intervention are critical in decreasing mortality and morbidity. The prognosis is good except in those with intra-abdominal or pelvic abscesses due to organ perforation.

The most important medicolegal concerns in these cases include:

- Ensuring that the patient indeed does have sepsis
- Rapidly identifying the source
- Implementing effective treatments.