phenomenon, will slow the rate of edema formation, with maximum effect at 18 to 24 hours.

Another systemic response is anemia, caused by direct heat destruction of red blood cells (RBCs), hemolysis of injured RBCs, and trapping of RBCs in the microvascular thrombi of damaged cells. A long-term decrease in the number of RBCs may occur as a result of increased RBC fragility. Initially, there is an increased blood flow to the heart, brain, and kidneys, with decreased blood flow to the gastrointestinal tract. There is an increase in metabolism to maintain body heat, providing for the increased energy needs of the body.

Complications

Burn injured children are subject to a number of serious complications resulting both from the burn and systemic alterations. The immediate threat to life is related to airway compromise and profound burn shock. Burn shock is in the immediate post-burn period and is marked by dramatic alterations in circulation. With fluid loss through denuded skin, capillary permeability increases and vessels become dilated. Circulating blood volume decreases rapidly and cardiac output is reduced. During healing, infection—both local and systemic sepsis—is the primary complication. Mortality associated with burns in children increases with the severity of injury and decreases as age advances. In children older than 3 years old, the mortality rate is similar to that of adults. Below this age, the survival rate with burns and their associated complications lessens considerably.

A less apparent respiratory tract injury is inhalation of carbon monoxide. Carbon monoxide has a greater affinity for hemoglobin than does oxygen, thereby depriving peripheral tissues and oxygen-dependent organs (e.g., the heart and brain) of the oxygen needed for survival. Treatment for either of these two problems is 100% oxygen, which reverses the situation rapidly.

Pulmonary problems are a major cause of fatality in children with either direct burns or result in complications in the respiratory tract. Early in the post-burn period, most pulmonary infections result from nosocomial exposure, immobility, and abdominal distention. The hematogenous variety occurs later and is related to the septic burn wound or other foci, such as phlebitis at the site of an invasive