

## IV FLUIDS



Expansion of circulating blood volume is critical in patients with acute blood loss (e.g. ruptured abdominal aortic aneurysm, gastrointestinal hemorrhage, or hemorrhagic shock due to trauma). Volume expansion can be achieved with whole blood, crystalloid solutions (e.g. Ringer's solution or 0.9% saline), or colloid solutions (e.g. human serum albumin or 6% hetastarch).

Intravenous fluids are also used to keep IV lines open for drug administration; 5% dextrose in water (D5W) has been used most often. Since hyperglycemia in cardiac arrest patients who survive is associated with worse neurological outcomes and because sodium overload is rarely encountered with normal saline use, normal saline (or lactated Ringer's) is the preferred infusion solution during cardiac arrest, although D5W remains acceptable. Patients with hypovolemia and hypotension and those with acute MI, especially right ventricular infarction, can benefit from volume expansion.



Our protocols reference 0.9 NS when volume expansion is indicated. If NS is not available, Lactated Ringer's (LR) may be substituted with the following precautions.

- ✓ LR should be used with great care, if at all, in patients with hyperkalemia, severe renal failure, crush injury, and in conditions in which potassium retention is present.
- ✓ LR should be used with great care in patients with metabolic or respiratory alkalosis and in severe hepatic insufficiency.
- ✓ LR should not be administered simultaneously with blood through the same administration set because of the likelihood of coagulation.
- ✓ LR should not be used in patients with acute stroke (including ischemic stroke, intracranial hemorrhage (ICH), and subarachnoid hemorrhage (SAH), or in patients with acute traumatic brain or spinal cord injury.