

Standardized protocol and surgery improve mortality outcomes

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For patients who have experienced a large stroke that cuts off blood supply to a large part of the brain, the use of standardized medical management protocol and surgery to decompress swelling can improve life expectancy, Mayo Clinic researchers found in a recent study.

The medical protocol provided each patient with consistent procedures for airway management, ventilator settings, [blood pressure control](#), fluid and electrolyte management, gastrointestinal and nutritional management, hematologic monitoring and management, intracranial pressure monitoring, sedation, use of medication, anticonvulsants, prevention against deep-vein thrombosis and rehabilitation.

Surgery involved removing a large portion of the skull over the area of the stroke to provide extra room for the brain swelling. This reduced pressure in the head and risk of death. For surviving patients, the piece of skull was replaced via a second [surgery](#) after the brain swelling had resolved.

"We discovered who – out of this patient group – was most at risk for mortality. We also determined that by using a standardized medical protocol – in other words, treating every patient in the exact same way and preparing for each issue we may encounter – we were able to reduce patient mortality by about 50 percent," says Douglas Chyatte, M.D., a study author and neurosurgeon at Mayo Clinic Health System. "In addition, when we examined surgery, there was a positive trend in reducing mortality in this group of patients."

Stroke is the fourth leading cause of death in the United States, according to the Centers for Disease Control and Prevention. As many as 80 percent of patients with large supratentorial hemispheric infarction strokes die, but research by Mayo Clinic and other medical experts has uncovered ways to significantly reduce deaths in these patients. The findings are published in the *American Heart Association Stroke Journal*.

The researchers screened nearly 5,000 [stroke patients](#) to determine eligibility for the study. About 70 patients were eligible based on their diagnosis of a large supratentorial hemispheric infarction stroke, and 40 enrolled in the study. All enrolled patients were treated using the standardized [medical treatment](#) protocol, and [patients](#) with more severe conditions received further medical treatment or further medical treatment plus surgery.

Provided by Mayo Clinic

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