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How to minimize stroke damage

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Following a stroke, factors as varied as blood sugar, body temperature and position in bed can affect patient outcomes, Loyola University Medical Center researchers report.

In a review article in the journal *MedLink Neurology,* first author Murray Flaster, MD, PhD and colleagues summarize the latest research on caring for ischemic stroke patients. (Most strokes are ischemic, meaning they are caused by blood clots.)

"The period immediately following an acute ischemic stroke is a time of significant risk," the Loyola neurologists write. "Meticulous attention to the care of the stroke patient during this time can prevent further neurologic injury and minimize common complications, optimizing the chance of functional recovery."

Stroke care has two main objectives – minimizing injury to brain tissue and preventing and treating the many neurologic and medical complications that can occur just after a stroke.

The authors discuss the many complex factors that affect outcomes. For example, there is considerable evidence of a link between hyperglycemia (high blood sugar) and poor outcomes after stroke. The authors recommend strict blood sugar control, using frequent finger-stick glucose checks and aggressive insulin treatment.

For each 1 degree C increase in the body temperature of stroke patients, the risk of death or severe disability more than doubles. Therapeutic

cooling has been shown to help cardiac arrest patients, and clinical trials are underway to determine whether such cooling could also help stroke patients. Until those trials are completed, the goal should be to keep normal temperatures (between 95.9 and 99.5 degrees F).

Position in bed also is important, because sitting upright decreases blood flow in the brain. A common practice is to keep the patient lying flat for 24 hours. If a patient has orthopnea (difficulty breathing while lying flat), the head of the bed should be kept at the lowest elevation the patient can tolerate.

The authors discuss many other issues in stroke care, including blood pressure management; blood volume; statin therapy; management of complications such as pneumonia and sepsis; heart attack and other cardiac problems; blood clots; infection; malnutrition and aspiration; brain swelling; seizures; recurrent stroke; and brain hemorrhages.

Studies have shown that hospital units that specialize in stroke care decrease mortality, increase the likelihood of being discharged to home and improve functional status and quality of life.

All patients should receive supportive care -- including those who suffer major strokes and the elderly. "Even in these populations, the majority of patients will survive their stroke," the authors write. "The degree of functional recovery, however, may be dramatically impacted by the intensity and appropriateness of supportive care."

Provided by Loyola University Health System

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