

New treatment more effective at reducing blood clots in brain-injured patients, surgeons find

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Researchers from the University of Missouri School of Medicine have found that a new protocol that uses preventive blood-thinning medication in the treatment of patients with traumatic brain injuries reduces the risk of patients developing life-threatening blood clots without increasing the risk of bleeding inside the brain.

According to the Centers for Disease Control and Prevention, at least 1.7 million traumatic brain injuries occur each year. One of the most common complications associated with traumatic brain injuries is the risk of dangerous blood clots that can form in the circulatory system elsewhere in the body. For [patients](#) with [traumatic injuries](#), the body forms blood clots which can break loose and travel to the lungs or other areas, causing dangerous complications.

"Our study found that treating traumatic brain-injured patients with an anticoagulant, or blood-thinning medication, is safe and decreases the risk of these dangerous clots," said N. Scott Litofsky, M.D., chief of the MU School of Medicine's Division of Neurological Surgery and director of neuro-oncology and radiosurgery at MU Health Care. "We found that patients treated with preventive [blood thinners](#) had a decreased risk of deep-vein blood clots and no increased risk of intracranial hemorrhaging."

In May 2009, Litofsky, along with study co-author Stephen Barnes,

M.D., acute care surgeon and chief of the MU Division of Acute Care Surgery, created a new protocol for treating head trauma patients in University Hospital's Frank L. Mitchell Jr., M.D., Trauma Center using blood-thinning medications.

"One of the main challenges in treating patients with traumatic brain injuries is balancing the risk of intracranial bleeding with the risk of [blood clots](#) formed elsewhere in the body," Litofsky said.

In the study, the researchers compared the outcomes of 107 patients with traumatic brain injuries who were treated before the new protocol was put into place with the outcomes of 129 patients who were treated with the blood-thinning medication. Among the patients who did not receive blood thinners, six experienced deep-venous clotting, compared with zero instances of the condition in patients who received the medication. Among the patients who did not receive blood thinners, three patients experienced increased bleeding in the brain, compared with one patient who received the medication.

"Based on our results, we will continue to follow the new protocol in our [trauma center](#), and we believe that other trauma centers would benefit from adopting a similar protocol in their practice," Litofsky said. "If we look at this issue across the country, we should hopefully see this complication occurring less often in brain-injured patients."

More information: The study, "Safety and Efficacy of Early Thromboembolism Chemoprophylaxis After Intracranial Hemorrhage from Traumatic Brain Injury," was published online Sept. 20 by the *Journal of Neurosurgery*, the journal for the American Association of Neurological Surgeons.

Provided by University of Missouri-Columbia

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