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Study finds traumatic brain injury treatment is ineffective

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More than 1.7 million people in the U.S. alone suffer a traumatic brain injury (TBI) every year, often resulting in permanent disabilities or death. Up to half of these patients will experience progression of bleeding inside or around the brain, the occurrence of which is associated with an increased risk of death.

A common treatment to prevent progression of "traumatic intracranial hemorrhage" is the transfusion of platelets, which are irregular shaped cells that cause blood to clot, and the administration of desmopressin (DDAVP), a naturally occurring hormone used to treat bleeding and a number of other medical conditions. A new study from Los Angeles Biomedical Research Institute (LA BioMed) researchers, published online ahead of print in the *Journal of Neurotrauma*, finds this treatment is not effective in preventing further bleeding in the brain or in reducing the risk of death for patients with TBI.

"Previous studies of platelet transfusion have looked only at mortality, and few studies have addressed the effect of DDAVP on bleeding in patients with TBI," said Dennis Yong Kim, MD, an LA BioMed lead researcher and author of the study. "Our study found that the administration of platelets and DDAVP is no more effective in preventing progression of hemorrhage or death than was the use of none of these medications, irrespective of whether or not patients were on antiplatelet medications, such as aspirin, prior to their TBI. Given the limited availability and potential for complications associated with transfusion of blood products like platelets, we believe that physicians

should take a step back and re-think the necessity and efficacy of such treatments in patients with TBI."

The researchers conducted a three-year retrospective study of the records of patients admitted to a Level 1 trauma center with TBI between Jan. 1, 2010 and Dec. 31, 2012. Of the 408 patients who fit the criteria, 126 received platelet transfusions and DDAVP and 282 did not.

Overall, 37% of the patients demonstrated progression of traumatic intracranial hemorrhage within four hours of admission. The researchers compared the outcomes for the patients who received platelet transfusions and DDAVP and the patients who did not receive the therapies. Their comparison found no significant differences in mortality or hemorrhage progression between the two groups.

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