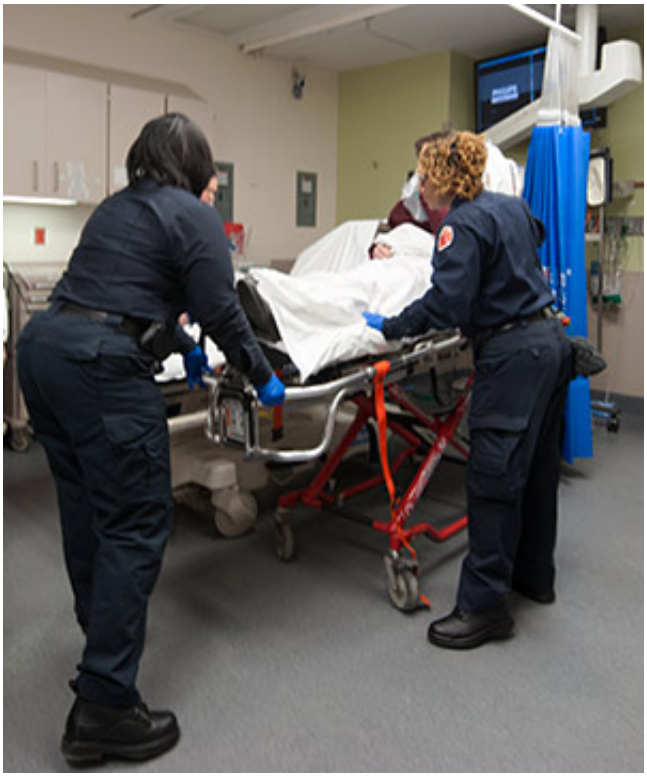
Clinical trial in trauma patients to evaluate drug that stops excessive bleeding

November 20 2015, by Kristina Sauerwein



Researchers at Washington University School of Medicine in St. Louis will evaluate a drug that stops excessive bleeding in a clinical trial scheduled to begin in early 2016. The trial will enroll 150 trauma patients ages 18 and older who are treated in the emergency department at Barnes-Jewish Hospital for life-threatening blood loss. Credit: Robert Boston

In trauma patients experiencing severe bleeding, researchers at Washington University School of Medicine in St. Louis will evaluate a

drug already approved to minimize blood loss in people suffering from hemophilia—a genetic clotting disorder—or heavy menstrual periods.

Tranexamic acid, or TXA, often is used during cardiac and orthopedic surgeries to prevent excessive bleeding and has been used by the U.S. military to treat gravely wounded soldiers overseas. The drug, also known by the brand names Lysteda and Cyklokapron, increases the strength of blood clots and has been shown to save lives in patients with severe bleeding. But TXA has not been studied closely to determine the best dosage and how the drug works in severely injured patients experiencing massive blood loss.

The trial, scheduled to begin in early 2016, will enroll 150 patients ages 18 and older with life-threatening injuries from car accidents and gun shots, for example, who are treated in the emergency department at Barnes-Jewish Hospital.

"Improvements in therapies for patients with life-threatening bleeding are desperately needed," said study co-investigator Philip Spinella, MD, associate professor of pediatrics and director of the university's Pediatric Critical Care Translational Research Program. "TXA reduces the breakdown of clots that form with bleeding and, as a result, has the potential to reduce bleeding deaths from severe trauma."

The trial – officially known as the TAMPITI (Tranexamic Acid Mechanisms and Pharmacokinetics In Traumatic Injury) Trial – is funded by a $2.5 million grant from the U.S. Department of Defense and is expected to last 18 months.

TXA must be given within two hours of a patient's injury. Because critically ill patients may be too severely injured to give consent, the researchers received approval from the Food and Drug Administration, the Department of Defense and Washington University's Institutional

Review Board (IRB) to enroll patients with life-threatening injuries if the patients themselves or legally authorized family members are unable to give consent. The approval was granted under an exception from informed consent for emergency research.

The Washington University researchers outlined their plans to the FDA and the Washington University IRB for conducting community outreach to notify St. Louis-area residents about the study and give people the opportunity to provide feedback before the clinical trial begins.

The researchers also are speaking to community organizations, placing posters and flyers in local businesses, and coordinating outreach efforts to reach larger audiences.

People living in the St. Louis area who do not want to be enrolled in the trial may opt out by wearing a bracelet that says, "OPT OUT TAMPITI." To get the free bracelet, patients can visit the TAMPITI Trial website at www.TAMPITI.wustl.edu, call researchers at 314-747-4185 or email tampititrial@wudosis.wustl.edu.

Conducting a study in the emergency department is challenging, the researchers said, because of the inability of some patients to provide informed consent due to their injuries.

"New, potentially life-saving advances in emergency medicine would remain at a standstill without the federal rule permitting an exception from informed consent for emergency research," said study co-investigator Grant Bochicchio, MD, chief of acute and critical care surgery and the Harry Edison Professor of Surgery.

Trauma patients who require at least one unit of blood or immediate transfer to an operating room are eligible for the trial. Such patients will be randomly assigned to receive one of the following three treatments,

given intravenously (IV):

- Sterile saline (standard treatment)
- Two-gram dose of TXA
- Four-gram dose of TXA

The researchers will evaluate the optimal dosage of the drug needed to improve survival and the drug's safety in this patient population.

Patients will be monitored throughout their hospital stays and will have blood drawn at different time points within 72 hours after the drug has been given. This will help determine how the medication is absorbed and broken down by the body. The researchers also will look at whether TXA affects the function of the immune system.

Globally, TXA has shown promise in preventing deaths from trauma. Five years ago, The Lancet published research that examined 20,000 trauma patients worldwide and found that the drug could lower the risk of dying by 15 percent. However, the study lacked thorough information on how TXA works, optimal dosing and risks such as developing blood clots and, rarely, the onset of seizures.

"Giving trauma patients TXA has not been standard practice due to concerns about appropriate dosing and safety in this population," Bochicchio said. "This trial will provide high-quality data to inform how and when the drug should be used in trauma patients."

The Department of Defense also is funding parallel trials of TXA's effectiveness at the University of Pittsburgh and the University of Washington. In one study, the drug will be given to trauma patients transported by air to a level 1 trauma center to see if it reduces mortality rates; in the other, TXA will be evaluated in patients with traumatic

brain injuries to determine whether it can improve favorable, long-term outcomes. In both of those trials, the institutions have been granted exceptions to informed consent so that severely injured trauma patients can be enrolled.

Provided by Washington University in St. Louis