

Should paramedics be allowed to give antibiotics to trauma victims?

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For years, infection rates from open fractures have remained stubbornly high.

But a new study has found that [infection rates](#) can be reduced dramatically by giving patients [antibiotics](#) within the first hour of injury. The finding suggests that allowing paramedics to administer antibiotics in the field "may substantially improve outcomes for severe open fractures," first author William Lack, MD, and colleagues report in the *Journal of Orthopaedic Trauma*. "This will require a collaborative effort between first responders and hospital providers."

Dr. Lack is an orthopaedic trauma surgeon at Loyola University Medical Center. The study was conducted at Carolinas Medical Center, where Dr. Lack completed a fellowship in [orthopaedic trauma](#) surgery before joining Loyola.

The study included 137 trauma patients who had open fractures of the tibia (shinbone). In an open fracture, bone sticks out through the skin or a wound penetrates down to the broken bone. Patients in the study had Type III breaks, the most severe type of open fractures.

The study found that patients who received antibiotics longer than 66 minutes after their injuries were 3.79 times more likely to experience infections. Patients whose wounds were not covered within the first five days were 7.39 times more likely to experience infections.

Among patients who received antibiotics within one hour and wound closure within five days, only 2.8 percent had infections. Patients who had either delayed antibiotics or delayed wound closure had a 10.2 percent infection rate. Patients who had both delayed antibiotics and delayed wound closure suffered a 40.5 percent infection rate.

The study found that the efficacy of administering antibiotics was "more sensitive to the timing of administration and more important to patient outcomes than previously demonstrated."

In some patients, it's not possible to close wounds within five days, due to such factors as swelling, skin loss and additional surgery. But it would be feasible for paramedics to administer antibiotics in the field, Dr. Lack said. He noted that paramedics already can administer certain other medications. And in the military, medics routinely administer antibiotics on the battlefield to soldiers with open fractures.

But first, additional research is needed to confirm that allowing paramedics to administer antibiotics is safe and effective. Dr. Lack is participating in such a study underway at Carolinas Medical Center.

Provided by Loyola University Health System

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