

washingtonpost.com

Resilient Infections Worry Military Doctors

Advertisement

By Jackie Spinner
Washington Post Staff Writer
Saturday, May 5, 2007; B01

Like most patients in the infectious disease ward at [Walter Reed Army Medical Center](#), Jon Harris has an "A" written next to his name on the white board by the nursing desk. The 23-year-old Army specialist had a leg amputated below the knee after a roadside bomb attack in [Iraq](#).

But the capital letter indicates another medical problem that increasingly worries military doctors -- an infection from a resilient bug known as *Acinetobacter*.

Harris, who arrived at [Walter Reed](#) on April 10, said he is convinced he picked up the infection when he fell to the ground in the attack. "I got dirty from being dropped six to seven feet from the truck," the soldier from [Missouri](#) said one recent day.

However, military doctors say they don't know exactly what's causing infections such as the one Harris has, and they are racing to find effective treatments. Four types of bacteria, they say, are causing severe and hard-to-treat infections for many troops wounded in Iraq and [Afghanistan](#): *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* and *Staphylococcus aureus*.

The infections have occurred in more than 600 injured troops from the two war zones who have had an arm or leg amputated, doctors tracking the cases say, and in other troops with lesser wounds. Such infections also can occur among civilians with traumatic wounds or other health problems, doctors say, but the high rate of infection for injured troops is raising concerns.

In response, the U.S. Army Institute of Surgical Research awarded a \$1.6 million grant in February to a [University of Missouri](#) research team to work with doctors at Walter Reed in the District and Brooke Army Medical Center in [Texas](#). The researchers' aim is to simulate the bomb blast wounds that seem especially vulnerable to the infections and to study how the infections respond to antibiotics.

"The outbreak the military has described is very large," said Arjun Srinivasan, a medical epidemiologist at the [Centers for Disease Control and Prevention](#), which has been working with the Army in its research.

Army Col. Robert Kasper, a doctor with a combat support hospital in the [Green Zone in Baghdad](#), said that military doctors in Iraq are cooperating with [U.S.](#) hospitals to identify the sources of the infections.

"These same organisms are a big problem" in many civilian hospital intensive care units, he said, adding that the infections can also be found among some people who have been in car accidents or have gunshot wounds.

But Jason Calhoun, chairman of orthopedic surgery at the University of Missouri at Columbia School of Medicine, who will help lead the four-year study, said there are many unanswered questions about the bacteria and the outbreak of infections among injured troops. "Many are resistant to common types of antibiotics," Calhoun said. He added in a statement: "Ultimately this research could mean fewer extremity infections, fewer surgeries and fewer amputations."

The nature of the wounds sustained in Iraq and Afghanistan has complicated efforts to control the infections, doctors said. Darren Linkin, director of infection control at the Veterans Affairs Medical Center in [Philadelphia](#), said that bomb

blasts cause a large amount of tissue damage, making infections more likely to occur and harder to treat.

"If there's not blood flow to the dead tissue, the antibiotics can't get to the infection," he said.

In addition, advances in combat gear and battlefield medicine mean that more troops are surviving serious injuries than in past wars. "You have people severely wounded," Linkin said. "These people are at high risk. The infections cause the patient to stay in the hospital longer, with more complications, and they have a higher risk of death."

Military officials could not provide information about any cases in which the infections have caused death. Nor could they specify how many of the more than 25,000 troops injured in the two conflicts have been infected, but that question is expected to be addressed in the study.

University of Missouri researchers plan to inject rabbits with an agent that causes tissue damage similar to wounds from bomb attacks. The researchers will then inject the rabbits with bacteria and treat them with antibiotics to learn how to contain the four types of infections.

Military doctors first noticed a high rate of *Acinetobacter* infections in 2003 at the [U.S. military](#) hospital in Landstuhl, [Germany](#), a destination for many wounded troops. Doctors found evidence of the infection in patients with pneumonia.

Acinetobacter is found in soil and can live on open surfaces for a number of days, enabling it to spread. It is rare for healthy people to become infected, but medical experts say that patients on ventilators can be vulnerable.

Pseudomonas aeruginosa thrives in moist environments and is a threat to patients with several kinds of injuries, including burns.

Klebsiella pneumoniae is typically acquired in a hospital setting and is often associated with people with poor nutrition and those with slightly depressed immune systems.

Both *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* can live in water, another possible medium for the spread of infection, doctors said.

Some patients with open wounds also seem susceptible to the dangerous *Staphylococcus aureus*, which is found on skin.

"It's a difficult situation," said Col. Glenn Wortmann, acting chief of infectious diseases at Walter Reed. "It's very serious. The Army had experience with *Acinetobacter* in [Vietnam](#). But what's unexpected is the reach of the outbreak."

Srinivasan said that infection-control methods used in civilian hospitals often cannot be applied in military hospitals in war zones.

"How do you maintain infection control in a combat setting?" Srinivasan said. "The challenges the military faces are not the same challenges in civilian hospitals. It makes the problem even more difficult to combat."

© 2007 The Washington Post Company

[Ads by Google](#)

[Faster Internet](#)

Optimize your Internet Speed and your PC in a few minutes!

www.tune-up.com

[Free Internet Speed Check](#)

Run our free Optimize scan to find out how to get a faster internet