

NEWS RELEASE

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June 8, 2004

Researchers Help Lead Effort Against Threat of Bioterrorism

FOR IMMEDIATE RELEASE

It's been less than two years since the federal government unveiled its plan to vaccinate hundreds of thousands of military personnel and first-responders against the threat of a terrorist attack using smallpox. But it's a plan that has been cut short due to a high number of side effects from what appears to be the vaccine itself. Now researchers at North Carolina State University's College of Veterinary Medicine and Duke University are trying to determine exactly what is happening.

According to Dr. Barbara Sherry, professor of virology in the College of Veterinary Medicine, the problem is myocarditis, a viral infection of the heart. "About 40,000 civilians were vaccinated and some of them came forward complaining of chest pains, shortness of breath and a few other symptoms. Some estimates put the rate as high as 1 in 2,000," Sherry said. "These numbers only include people who have symptoms. The number of people who experience no symptoms is probably much higher. This is probably just the tip of the iceberg," she added.

"No one is surprised that we're seeing myocarditis, because we've seen it before, but everyone is surprised at the number of cases and that it is so clearly associated with vaccination," Sherry said.

"Compare the risk of someone in this country getting smallpox versus the risks associated with vaccinating 450,000 people with a flawed vaccine," Sherry said. "The good news is that for the vast majority of people myocarditis will never be an issue, but a fraction of them will go on to develop a problem later on."

Sherry said that people who have myocarditis can later develop dilated cardiomyopathy (DCM), which causes severe heart failure. What is not known is if this vaccine-associated myocarditis can lead to DCM. There's also a concern that people who seemingly recover from myocarditis could face consequences later on.

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All of the people experiencing symptoms of myocarditis were immunized with the DryVax smallpox vaccine. Another related smallpox vaccine, called MVA, has been developed, but is not yet being used routinely in vaccinations. Sherry and her collaborator, Dr. David Pickup, a Duke University expert in smallpox vaccines, are studying DryVax and MVA and looking at them in heart cells.

“We want to find out if these viruses do different things to these heart cells. We’ve already determined that these live-virus vaccines infect the heart cells and cause damage, but we still don’t know how it happens. The next step is to try and figure out what they are doing to those heart cells. What is it about these viruses that causes the problems?” Sherry said.

Smallpox is a highly contagious, and potentially fatal, infectious disease characterized by fever, weakness and small bumps on the skin. The only practical prevention is vaccination. The last case in the United States was reported in 1949, and routine vaccination in this country ended in 1971. Medical experts declared the world free of smallpox in 1980.

The two-year, \$500,000 study is funded by the National Institutes of Health.

“If we understood more about why this is happening and if we could design a better vaccine, we could go back to the original plan of vaccinating all these first responders,” Sherry said.