Laboratory Safety Fatality File



Death of California Researcher Spurs Investigation

A 25-year-old research associate may have contracted fatal meningococcal infection in the lab.

Local and federal health agencies are investigating the death of Richard Din, a 25-year-old research associate at the Veterans Affairs (VA) Medical Center in San Francisco, California. Din died 28 April of meningococcal disease, which authorities believe he contracted from exposure to bacteria in the lab where he worked.

Din began complaining of headache and nausea last Friday evening, says Harry Lampiris, chief of infectious disease at the San Francisco VA. (The principal investigator of the project Din was working on is Gary Jarvis, an infectious disease researcher.) By the next morning Din's symptoms had worsened, and friends took him to the hospital. His condition deteriorated quickly, and he died 17 hours after his symptoms first appeared.

Din had worked in a lab at the San Francisco VA that studies Neisseria meningitidis, a bacterium that causes roughly 1000 cases of meningococcal disease and 75 fatalities in the United States each year, Lampiris says. The first symptoms, such as fever, aches, and nausea, are similar to those of less serious illnesses, but they can escalate quickly and cause death if antibiotics aren't administered soon after they first appear. Vaccines have been available since the 1960s for several strains of N. meningitidis, but not against so-called serotype B strains, which Din was working with the week before his death. Developing a vaccine against these strains was a long-term goal of the lab where Din worked, Lampiris says.

Tests have confirmed the presence of serotype B N. meningitidis in Din's blood, Lampiris says. The VA has sent additional samples to the Centers for Disease Control and Prevention (CDC) in Atlanta for genetic tests to determine if the specific strains Din handled in the lab match those in his blood. "It's presumed to be a lab exposure, but it's not 100%" unless those tests confirm it, Lampiris says.

What may have gone wrong is not yet clear. "An internal group investigated the lab and found no evidence of spills, or malfunctions, or problems with the

biosafety hood," Lampiris says. The lab has more than 20 years of experience working with these pathogens, Lampiris says, and Din joined the group about 6 months ago. "People in the lab felt that he was a hard working and fastidious person and was following the appropriate precautions." Din made no mention of any accidents or anything out of the ordinary to his co-workers, Lampiris says.

N. meningitidis is classified as a biosafety level 2 (BSL-2) pathogen, which means that any lab procedures with viable organisms should be done under a hood fitted with air filters, and researchers should wear a face shield or mask and goggles during procedures that could release the bacteria into the air, says Leonard Mayer, chief of the CDC's meningitis lab. "People that work in the lab normally are vaccinated, although with serotype B that doesn't provide any protection," Mayer says. "There's been a lot of discussion about elevating it [serotype B] to BSL-3," Mayer says, but he doubts this one incident will have much impact on that decision. It should, however, cause other researchers who work with these pathogens to redouble their safety efforts, Mayer says. "We will definitely be discussing this at our weekly lab meeting and reminding people that this is a life-threatening disease."

Lampiris says the lab will remain closed pending investigations by VA, the Department of Public Health of San Francisco and California, and the federal and state Occupational Safety and Health Administration. Lab members, as well as Din's personal contacts and health workers who had contact with him, have been treated prophylactically with antibiotics. "Obviously our whole institution is devastated," Lampiris says.