CEDARS-SINAI MEDICAL CENTER. NEWS

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EMBARGOED UNTIL: JUNE 17, 2:45 P.M., PST

NOVEL DIAGNOSTIC TOOL DETECTS LIFE-THREATENING INFECTIONS IN PATIENTS MORE RAPIDLY THAN STANDARD NUCLEAR IMAGING TESTS

LOS ANGELES, CA (Embargoed until June 17, 2002, 2:45, p.m., PST) Researchers at Cedars-Sinai Medical Center have found that a novel imaging agent detects life-threatening infections and inflammation in patients more rapidly than the standard nuclear medicine imaging tests typically used for this purpose. The imaging agent may eliminate the need for additional tests and reduce the risk of exposure involved in handling blood samples taken when additional clarification is needed to identify the infection.

The study, presented at the 49th Annual Meeting of the Society of Nuclear Medicine, sought to determine whether the agent, a non-invasive radiopharmaceutical recently FDA approved for the detection of lung cancer, was effective in identifying the presence of infection or inflammation. The investigators found that the imaging agent, called Tc 99m Depreotide detected the source of the infection in all patients studied three hours after they received the agent. Infection and inflammations included pneumonia, infections of bone, kidney, lining of the heart, gallbladder, skin and joint prosthesis.

"Our results show that a Depreotide scan identified the source of infection in all patients who had successfully undergone other types of nuclear imaging tests to determine the cause of infection," said Alan Waxman, M.D., the lead author of the study and the Director of Nuclear Medicine and Co-Chairman of Imaging at Cedars-Sinai Medical Center. "In short, Depreotide enabled us to determine the presence of infection about three hours after the patient underwent a Depreotide scan when it usually takes as long as 24 to 48 hours to get results. This means that medical decisions can be made much more rapidly and accurately when a patient's life may be at stake."

Typically, radiologists use nuclear imaging tests such as labeled white blood cells or other radio tracers to help identify the type and source of infection when patients present with fever or other signs of infection. These tests detect infection by slowly concentrating in areas where white blood cells have collected to fight infection. The detection of abnormality often depends on the concentration of the tracer over many hours or days before the abnormalities are visualized. Test results can take from 24 to 48 hours and require laboratory technicians to handle blood products, which can expose them to HIV or AIDS.

The imaging agent, Depreotide, is a small synthetic peptide that works by attaching to proteins called somatostatin receptors, which are present on lung cancer cell surfaces. And, because a large

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number of these receptors are present on lung cancer cells, the agent concentrates on the cells and provides clear images of the tumor. But some infection and inflammatory processes also involve the expression of somatostatin receptors on cell surfaces, leading Dr. Waxman and his research team to examine whether the agent could provide clear images of the infection.

To determine whether Depreotide could detect infection more rapidly and accurately than traditional imaging tests, 19 patients with 21 previously identified sources of infection/inflammation were given an injection of Tc-99m Depreotide and underwent whole body imaging scans with a nuclear medicine camera two hours later. Infection/inflammation was detected in all patients studied, sometimes more accurately than other tests, including CT scans.

The investigators found that Depreotide was able to detect the source of infection in all or 100 percent of the patients with previously identified infections within a three-hour time period.

“Our results suggest that this agent is capable of detecting infections within three hours after receiving an injection of Depreotide without handling blood products or having to perform extra imaging studies,” said Dr. Waxman.

This study was supported by a grant from Berlex Laboratories, Inc. Further studies will investigate the type of infection that is best characterized by the Depreotide agent.

Cedars-Sinai Medical Center is one of the largest nonprofit academic medical centers in the Western United States. For the fifth straight two-year period, Cedars-Sinai has been named Southern California’s gold standard in health care in an independent survey. Cedars-Sinai is internationally renowned for its diagnostic and treatment capabilities and its broad spectrum of programs and services, as well as breakthrough in biomedical research and superlative medical education. Named one of the 100 “Most Wired” hospitals in health care in 2001, the Medical Center ranks among the top 10 non-university hospitals in the nation for its research activities.

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