

Researchers find benefit for lymphoma patients in combined PET-CT scanning

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Combined positron emission tomography (PET) and computed tomography (CT) imaging of lymphoma patients is a more effective method to evaluate response to radiation therapy, and may help patients avoid unnecessary follow-up treatments, a study by researchers at the University of Southern California (USC) suggests.

The findings of the study will be published in the March issue of the journal *Radiology*, and is now available online.

The clinical study is the first to show the advantage of combined PET-CT imaging in evaluating radioimmunotherapy for patients with non-Hodgkin lymphoma, says Gary Ulaner, M.D., Ph.D., radiology resident and nuclear medicine fellow at the Keck School of Medicine of USC and the principal investigator of the study.

"Combined PET-CT imaging is more accurate in defining a complete response to radio-immunotherapy treatment," Ulaner says. "Specifically, PET-CT is able to correctly label inactive scar masses, which are sometimes mistaken for active cancer when CT is used alone."

Radioimmunotherapy is a type of radiation treatment that targets cancer cells through antibodies. The therapy causes less harm to healthy cells and usually results in fewer side effects than other cancer treatments, Ulaner notes. Typically, the treatment has been evaluated by use of CT imaging alone, which uses special x-ray equipment to produce multiple images of the inside of the body.

PET is a type of nuclear medicine imaging that uses very small amounts of radioactive material to diagnose or treat disease and other abnormalities. When PET and CT scans are combined they can produce a more complete image of the cancer metabolism, he says.

Researchers from the USC Positron Emission Tomography Center evaluated five men and five women--ranging in age from 38 to 70 years--who underwent PET and CT imaging both several weeks before and several months after radioimmunotherapy for non-Hodgkin lymphoma. After evaluation of CT images alone, eight of ten patients were classified as responders to treatment, and two patients were classified as having a complete response to the treatment.

After reevaluating with the fused PET-CT scans, researchers found that two patients who had residual lesions had been misclassified. Both of the patients were free of evident disease, and remained healthy after 18 or more months of follow up.

"Using this relatively novel hybrid imaging means that some patients will only require a one-day treatment of radioimmunotherapy instead of several rounds of chemotherapy," says Peter Conti, M.D, Ph.D., professor of radiology at the Keck School of Medicine. "We will have a more accurate image that will identify the patients who have a complete response to the treatment."

Conti is a national leader in treatment of non-Hodgkin lymphoma with radioimmunotherapy.

"We hope this research will result in PET-CT imaging becoming the standard for evaluating patients after treatment," he says. "Greater accuracy will improve how physicians care for lymphoma patients."

Source: University of Southern California

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