Quantitative PET measures early response of non-Hodgkin’s lymphoma to chemotherapy

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By NeedsFixing [1]

French researchers have found that measuring a quantitative index of FDG-PET -- one that reflects the reduction of metabolic activity after chemotherapy first begins -- adds accurate information about the response of non-Hodgkin’s lymphoma to first-line chemotherapy.

Dr. Michel Meignan and colleagues in the nuclear medicine lab at Henri Mondor Hospital in Creteil, France, examined 92 patients with diffuse large B-cell lymphoma before and after two cycles of chemotherapy. Tumor response was assessed visually and by various quantitative parameters. They found that quantification of tumor FDG uptake (the ratio of tissue radioactivity concentration) can markedly improve the accuracy of FDG-PET for prediction of patient outcome. "We demonstrated that a quantitative assessment of therapeutic response for patients with diffuse large B-cell lymphoma is more accurate than visual analysis alone when using the radiotracer FDG with PET scans," Meignan said.

The ability to predict tumor response early in the course of treatment is valuable clinically, allowing intensification of treatment in those patients who are unlikely to respond to first-line chemotherapy, he said. Treatment may be shortened in those patients who show a favorable response after one or two cycles of chemotherapy. Quantification also may help identify the disease's transformation from low-grade to aggressive stage. Still, visual interpretation of PET scans will always be the first step of analysis and will prevail in case of difficulties in quantifying images.

Diffuse large B-cell lymphoma (DLBCL) is a fast-growing, aggressive form of non-Hodgkin's lymphoma, a cancer of the body's lymphatic system. Although there are more than 20 types of non-Hodgkin's lymphoma, DLBCL is the most common type, making up about 30% of all lymphomas. In the U.S., about 63,190 people are expected to be diagnosed with non-Hodgkin's lymphoma in 2007, according to recent statistics.

With more research, the future monitoring of cancer tumor response will probably include a combination of quantitative analysis and visual assessment, Meignan said. The study appeared in the October issue of the Journal of Nuclear Medicine.

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