

Molecular imaging signals new treatment protocol for kidney cancer

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Research revealed at the Society of Nuclear Medicine's 2012 Annual Meeting explores treatment with a newly developed type of radioimmunotherapy used for treating a resistant form of kidney cancer. The agent is able to hone in on the disease, called clear cell renal carcinoma, and kill the cancer by delivering radiation directly to it. However, the study shows that its effectiveness could be diminished when used after another anti-cancer therapy.

The radioimmunotherapy highlighted in this study is radiolabeled monoclonal antibody girentuximab (also known as cG250), a potent anticancer therapy that delivers a precise and powerful dose of radiation just at the site of cancerous tissues. The objective of the study was to investigate the effect of the widely used [tyrosine kinase inhibitor](#) (TKI) on the targeting of In-111-cG250 in clear cell renal [cancer patients](#).

"This research has important implications for future therapeutic regimens for patients with clear cell renal carcinoma," says Stijn Muselaers, M.D., lead physician of the study at Radboud University Nijmegen Medical Centre in Nijmegen, The Netherlands. "This study indicates that imaging and therapy of tumors with radiolabeled antibodies could be hampered in patients that are being treated with TKIs such as sorafenib. This informs clinicians about the most appropriate sequence of treatments for patients with clear cell renal carcinoma in order to improve the care and potential survival of these patients."

The tumor-seeking abilities of In-111-cG250 were tested in patients treated with another type of anti-cancer therapy called sorafenib, which interferes with the growth and spread of [cancer cells](#). Results of the study showed significantly lower tumor targeting of In-111-cG250 in patients after treatment with the sorafenib. The reason for this is that sorafenib prevents cG250 from targeting its receptor in the tumors, indicating that radioisotope-labeled cG250-based therapy might not be as effective as it would be if used alone.

For this study, 15 patients with a renal mass scheduled for surgery were recruited. Of these, 13 had clear cell renal carcinoma and ten of the participants received treatment with sorafenib. All participants were imaged with a molecular imaging method called immunoSPECT using In-111-cG250 at the beginning of the study and after the ten subjects completed treatment with sorafenib. Scans showed remarkably lower targeting of In-111-cG250 to tumors in patients who received sorafenib. These results suggest that imaging and radioimmunotherapy with cG250 drug compounds should be prescribed before a patient begins treatment with [sorafenib](#) or similar TKIs.

The U.S. National Cancer Institute estimates that in 2012, approximately 64,770 new cases will be diagnosed and 13,570 deaths will occur in America due to [kidney cancer](#). There are two major forms of the disease, including renal cell carcinoma and renal pelvis carcinoma. Clear cell renal carcinoma, which gets its name from the clear liquid gel called cytoplasm inside the cells, is a subtype of [renal cancer](#) thought to be caused in part by genetic mutations. This cancer develops in the tubules involved in the filtration of blood and waste products.

Provided by Society of Nuclear Medicine

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