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Cancer-seeking 'smart bombs' target kidney cancer cells

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Researchers are halting kidney cancer with a novel form of radioimmunotherapy that zeroes in on antigens associated with renal cell carcinoma. Patients with progressive kidney cancer receiving up to three doses of the therapy show dramatic slowing of cancer growth and stabilization of their disease.

"This study is another step forward in developing a cancer therapy that has the potential to provide additional treatment options for patients with renal cell carcinoma," says Wim Oyen, MD, professor and chairman of the department of nuclear medicine at Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands. "In many cases we were able to stop the disease from progressing and hopefully prolong patient survival without compromising their quality of life with serious adverse effects."

According to the American Cancer Society, 50,000 Americans are diagnosed with kidney cancer each year. In adults, the most common type of kidney cancer is renal cell carcinoma.

Radioimmunotherapy is a treatment for cancer comprising medical radionuclides bound with antibodies that recognize physiological changes involved in the disease process. This specific therapy, called Lu-177-cG250, targets kidney tumors with the monoclonal antibody cG250, which recognizes carbonic anhydrase IX—an antigen associated with renal cell carcinoma. Once inside the body the treatment targets cancerous tissues expressing this antigen, and the radionuclide kills those

cells, sparing surrounding healthy tissues.

For the purposes of this study, 20 patients with progressive, metastasized renal cell carcinoma received a maximum of three doses of Lu-177-cG250 and were evaluated for toxicity and therapeutic efficacy in three-month increments. A majority of patients, 14 out of 20, were able to reach stabilization of their cancer 12 weeks after treatment. Tumor growth averages dropped from 28.5 percent increase in size before treatment to 4.1 percent during the three months after their first treatment cycle. This study shows that Lu-177-cG250 is highly effective for targeting tumor lesions and for reducing cancer proliferation in patients with progressive kidney cancer.

More information: Scientific Paper 359: A. Stillebroer, O. Boerman, P. Mulders, I. Desar, C. van Herpen, E. Oosterwijk, W. Oyen, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; "Radioimmunotherapy with Lu-177 labeled anti-CAIX monoclonal antibody in advanced renal cell carcinoma," SNM's 58th Annual Meeting, June 4-8, 2011, San Antonio, TX.

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