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Radiopeptide therapy improves survival outcomes for neuroendocrine cancer patients

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Peptide-receptor radionuclide therapy (PRRT) has been a subject of growing research on neuroendocrine tumors, which take up residence in a variety of organs replete with nerve cells that respond to hormone signaling. A countrywide study in Germany deemed PRRT treatment not only safe and effective but life-prolonging, according to a study unveiled during the Society of Nuclear Medicine and Molecular Imaging's 2013 Annual Meeting.

PRRT is a new and yet-to-be-approved treatment for patients with neuroendocrine tumors (NETs). These develop when normal neuroendocrine cells go haywire in the pancreas or gastrointestinal tract and other hormone-sensitive organs. This study looked at the outcome of radionuclide therapy that combines specialized peptides radiolabeled with a cancer-killing and localized dose of radiation from lutetium-177 (Lu-199), yttrium-90 (Y-90) or a combination of the two.

"This is the first multi-institutional PRRT study for metastatic and inoperable NETs including pancreatic tumors, and the data are both encouraging and convincing, especially considering the prospective nature of the registry and high number of patients," said Samer Ezziddin, MD, PhD, a senior physician at the University of Bonn in Germany. "The progression-free survival outcomes of more than three years on average, even in pancreatic tumors, are outstanding when you look at typical outcomes associated with existing treatment options such as chemotherapy and multi-kinase inhibitors, which on average yield arrest of tumor progression in the order of one year. This relatively new form

of therapy is substantially supported by our research and gives new hope to patients with neuroendocrine tumors."

The retrospective study included research from several German cancer centers involving a total of 450 patients selected by prospective national registry. Subjects were followed at a median of just under 18 months and represented a range of neuroendocrine cancers. Pancreatic tumors accounted for 38 percent of the patient population, and tumors of the small intestine made up 30 percent of subjects. The remaining tumors were colorectal, lung or of unknown origin. Seventy-three percent of all tumors had been previously treated by means other than PRRT.

The findings of this research indicated only minor side effects, and overall survival of patients was at a median of just under five years. The median period that patients lived without progression of their disease from final treatment was 41 months. Neuroendocrine tumors of the pancreas are often difficult to treat if inoperable, but median progression-free survival was found to be 39 months with PRRT. Patients with tumors of the small bowel survived a median of 51 months without any advancement of their cancer.

"If these treatments were made available in the United States, patients would have a very valuable and effective treatment option with fewer side effects than most currently available therapies, and it might dramatically improve patient outcomes," said Ezziddin. "This and further research could lead to the establishment of PRRT as a truly targeted therapy for neuroendocrine tumors."

Ezziddin estimated that European regulatory approval for PRRT as a treatment for neuroendocrine tumors could be reached within three years. A PRRT clinical trial is currently underway and is being conducted by Advanced Accelerator Applications (AAA). Further studies are needed before the treatment could be green-lighted by the

U.S. Food and Drug Administration for neuroendocrine cancer treatment in America.

Provided by Society of Nuclear Medicine