Benefits of radionuclide therapy for neuroendocrine tumors

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According to new Dutch research featured in the September issue of The *Journal of Nuclear Medicine,* a peptide receptor radiolabeled therapy (PRRT), [177Lu-DOTA0,Tyr3]Octreotate (177Lu-octreotate) , is effective not only in decreasing tumor size but also in reducing the severity of side effects that often accompany a cancer diagnosis. While many neuroendocrine cancers are incurable, they grow relatively slowly, and life expectancy is relatively long, making quality of life an important factor in treatment.

In particular, the study "Quality of Life in 265 Patients with Gastroenteropancreatic or Bronchial Neuroendocrine Tumors Treated with [177Lu-DOTA0,Try3]Octreotate" focused on gastroenteropancreatic or bronchial neuroendocrine tumors. These tumors are relatively rare neoplasms that derive from the neuroendocrine system; they affect approximately 1-2.5 individuals per 100,000. Since they often have unpredictable biological behavior, the time from discovery to final diagnosis of the tumors is frequently delayed.

"In patients with gastroenteropancreatic or bronchial neuroendocrine tumors, median progression-free survival after therapy with 177Lu-octreotate is 40 months. Such a survival is promising only if the years that are gained are free of serious side-effects or symptoms that affect quality of life," said Saima Khan, MD, lead author of the study. "We showed that the years gained after this therapy show an improved quality of life, as judged by the patients themselves, according to a validated questionnaire. Moreover, this type of treatment lacks most of the serious adverse events and symptoms that are typical with chemotherapeutic agents."

For the study, 265 patients with gastroenteropancreatic or bronchial neuroendocrine tumors were treated with the radiolabeled pharmaceutical 177Lu-octreotate. Follow-up visits were scheduled at fixed time points: six weeks, three months and six months after the last treatment cycle and biannually thereafter. In addition to imaging scans and blood work, patients also completed the European Organisation for Research and Treatment of Cancer quality of life questionnaire-which measures levels of fatigue, nausea plus vomiting, pain, shortness of breath, insomnia, appetite loss, constipation and diarrhea, as well as physical, emotional, role, cognitive and social functioning-at each visit. A baseline questionnaire also was completed prior to therapy.

Computer tomography and magnetic resonance imaging were utilized to categorize tumor response into three groups-a remission group, a stable disease group and a progressive disease group. Among all groups, significant improvement in emotional and social functioning, insomnia, appetite loss and diarrhea was noted. The most important improvements, such as diarrhea, pain, nausea and vomiting, were observed in patients who had tumor regression after therapy with 177Lu-octreotate, which suggests that the improvement was a direct result of the treatment.

"It seems highly desirable that in future studies on the efficacy of antitumor agents-whether with radiopharmaceuticals or other drugs-quality of life evaluation forms be part of the evaluation of overall efficacy," noted Khan.

Provided by Society of Nuclear Medicine

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