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Peptide Receptor Radionuclide Therapy in Patients With Neurofibromatosis Type 2: Initial Experience

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Abstract

Purpose: Neurofibromatosis type 2 (NF2) is a genetic disorder that is associated with multiple tumors of the nervous system, and approximately one half of patients present with meningiomas. For patients with multifocal disease, somatostatin receptor-targeted peptide receptor radionuclide therapy (PRRT) might be a suitable systemic treatment option.

Patients and methods: Between March 2015 and August 2017, 11 NF2 patients (7 females and 4 males; mean age, 39 ± 12 years) with multifocal, progressive meningiomas underwent a median of 4 cycles of PRRT (range, 2-6 cycles). Acute and chronic adverse events were recorded according to National Institutes of Health's Common Toxicity Criteria (CTC) version 5.0. Follow-up MRIs (every 3 to 6 months), using the Response Assessment in Neuro-Oncology response criteria for meningiomas, were used to assess treatment responses.

Results: Peptide receptor radionuclide therapy was well tolerated in all patients without any relevant acute adverse effects. Transient hematologic toxicity (CTC grade 3) was observed in 2 subjects. Somatostatin receptor-directed radiopeptide therapy resulted in radiological disease stabilization in 6 of 11 patients. Median progression-free survival was 12 months (range, 1-55 months), and overall survival was 37 months (range, 5-61 months).

Conclusions: Based on our retrospective pilot data, PRRT is feasible and well-tolerated in NF2 patients. It might offer a suitable treatment option in subjects with multiple, recurrent, or treatment-refractory meningiomas.