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Single-Institution Clinical Experience of Toxicity with Lu177-DOTATATE Therapy

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BACKGROUND: With the FDA-approval of Lu177-DOTATATE in 2018, we are now gaining real-world experience with this therapy, which may be different than results from clinical trials. It is important to share these results and learn about institutional variations. This project focuses on the toxicity from Lu177-DOTATATE.

METHODS: This is an IRB-approved, retrospective study of 45 patients (20 women, 25 men, age range: 33-82) who have had at least one Lu177-DOTATATE therapy for NETs at our institution. To date, 17 patients have completed 4 cycles, 10 patients 3 cycles, 8 patients 2 cycles, and 10 patients 1 cycle of therapy. All but three patients had GEP-NETS. The others had renal or lung primaries or paraganglioma. We compiled data on all types of toxicity relative to the number of cycles of therapy given.

RESULTS: Of the 45 patient started on the therapy, 9 died before completing the therapy due to progressive disease. Five died after 1 cycle, two after 2 cycles, one after 3 cycles, and one after 4 cycles. Another 10 patients stopped therapy due to persistent CTCAE Grade 2 or higher toxicity. In all cases, thrombocytopenia was the issue, but without a correlation to the extent of bone disease or another factor. The average baseline platelets for those 10 patients was 176 (+/- 70), and their nadir was 41 (+/- 17). The average baseline platelets for those that completed all 4 cycles successfully was 240 (+/- 98), and the nadir was 189 (+/- 82). No patients experienced significant renal or hepatotoxicity.

CONCLUSION: In our experience, thrombocytopenia is the major toxicity seen, with 22% experiencing a significant reduction in platelets disrupting therapy. Other toxicity was not seen and a specific predictive pattern could not be identified. Additionally, starting the therapy sooner would likely prevent patients from not completing the therapy due to rapidly progressive disease.

