

# C-21

## Single institution experience with [<sup>131</sup>I]MIBG for pheochromocytoma and paraganglioma: Long-term outcomes and dosimetry

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### BACKGROUND

I-131 high-specific activity MIBG ([<sup>131</sup>I]MIBG) is the only FDA-approved radiopharmaceutical for metastatic pheochromocytoma/paraganglioma (PHEO/PGL). We present our institution's long-term efficacy, safety, and dosimetry data.

### METHODS

A retrospective review of patients with metastatic PHEO/PGL who received [<sup>131</sup>I]MIBG was performed. Radiographic response was assessed using RECIST 1.1 criteria, and toxicities were graded using CTCAE v5.0. Demographics, clinical presentation, lab values, and outcomes were assessed. Dosimetry was used to estimate absorbed dose to the kidneys, liver, and lungs, and reduce activity when necessary. Median progression-free survival (PFS) was estimated using the Kaplan-Meier method.

### RESULTS

Between 2020–2024, seven patients with metastatic PHEO (n=4) or PGL (n=3) were treated with [<sup>131</sup>I]MIBG. Median age was 63.7 years (range: 31–69); and mean follow-up was 27.7 months (range: 5.6 – 60.3). Three patients had SDHB mutations, one had a RET mutation. Five received 2 cycles and two received 1 cycle. Best responses included complete response (n=1), partial response (n=2), stable disease (n=2), and progressive disease (n=2), yielding an objective response rate of 42.9% and disease control rate of 71.4%. Only PHEO patients had objective responses. At last follow-up, 2/7 patients had died. Overall median PFS was 35.3 months. The median PFS and OS for patients with PGL were 2.5 months and 9.6 months, respectively. 2/3 (67%) patients with PGL experienced progression and death within 1 year, compared to 0/4 (0%) with progression or death in the PHEO group. Only 1/4 (25%) with PHEO progressed during the study period. Average organ dose per 1000 mCi was 23.2 Gy (range: 15.5–42.9) to kidneys, 21.8 (8.8–51.4) to liver, and 21.8 (14.6–57.7) to lungs. Post-progression therapies included [<sup>177</sup>Lu]Lu-DOTATATE (n=2), chemotherapy (n=1), and external beam radiation (n=1). Transient G3/G4 anemia occurred in 2/7 (29%), leukopenia in 2/7 (29%), and G4 thrombocytopenia in 1/7 (14%). None developed G3/G4 nephrotoxicity.

**Table 1: Patient Outcomes**

Patient	Tumor	Best Response	PFS (months)
P1	PHEO	PR	19.1*
P2	PGL	PD	0.90
P3	PGL	SD	52.1
P4	PGL	PD	2.5
P5	PHEO	CR	35.3
P6	PHEO	SD	21.7*
P7	PHEO	PR	15.7*

\* PFS Censored: No progression at last imaging.

## CONCLUSIONS

[<sup>131</sup>I]MIBG therapy resulted in prolonged disease control in metastatic PHEO/PGL with limited toxicity. Median PFS exceeded 35 months, with better outcomes in PHEO versus PGL. The most common toxicity was marrow suppression. These real-world findings support [<sup>131</sup>I]MIBG as an important option in select patients.

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