

# C-32

## Incidence of Peripheral Inserted Central Line Complications with Administration of <sup>177</sup>Lutetium Dotatate

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### BACKGROUND

<sup>177</sup>Lutetium dotatate is a radioligand therapy that can be used to treat somatostatin receptor-positive gastroenteropancreatic neuroendocrine tumors (GEP-NETs). The package insert does not specify which type of line is required for administration. VUMC uses peripherally inserted central catheters (PICCs) for administration, however, other facilities use peripheral intravenous catheters (PIVs). Current data on extravasation risk of radionucleotide therapy is sparse. We sought to determine the incidence of complications in patients who received a PICC.

### METHODS

This is a retrospective cohort quality improvement project in patients at VUMC who received <sup>177</sup>lutetium dotatate from 4/1/2018 to 2/28/2025. All patients who received <sup>177</sup>lutetium dotatate were included. Data was collected from the electronic health record. All patient data was analyzed using descriptive statistics. The primary endpoint is the incidence of complications due to <sup>177</sup>lutetium dotatate administration via PICC. Secondary endpoints include cost associated with complications of receiving a peripheral or central line for administration of treatment.

### RESULTS

There were a total of 1,059 PICC placements during the defined time period. Fifty percent of patients were male and the median age was 65. The small intestine was the primary disease site in 37.8% of patients, followed by pancreas in 24.3% of patients. PICC complications occurred in 46 (4.3%) of PICC placements. Specifics on complications are shown in table 1.

Complication	n=46
Bleeding	14 (32.6)
Clot	3 (7.0)
Irritation	2 (4.7)
Itching	2 (4.7)
Pain	12 (28.0)
Syncopal episode	7 (16.3)
Other	6 (14.0)
n(%)	

Other complications included numbness, mispositioning, hematoma, heart palpitations, pinching, and swelling.

Thirty patients received PICC but did not receive treatment due to lab parameters not being met, issues with obtaining a dose, or symptom burden. Three patients had unsuccessful PICC placement and thirteen required additional imaging to confirm placement. A financial analysis of these complications is ongoing.

## **CONCLUSIONS**

This study shows that patients receiving <sup>177</sup>lutetium dotatate through a PICC had complications in 4.3% of line placements. The most common complications from PICC placement and administration of treatment included bleeding, pain, and syncopal episodes. There were patients who received PICCs and required removal of the line without a dose of <sup>177</sup>lutetium dotatate and/or additional imaging to rule out complications, increasing costs to both the health care system and to the patient. Given the number of complications and increased cost of PICC line placement compared to PIV it is reasonable to administer <sup>177</sup>lutetium dotatate via PIV. Future directions include a comparison of complications and cost in patients who received treatment through a PIV line compared to PICC line.

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