

**^{177}Lu -OCTREOTATE
PEPTIDE RECEPTOR RADIONUCLIDE THERAPY
OF NEUROENDOCRINE TUMOURS:
DOSIMETRY OF PERSONNEL AND CAREGIVERS**

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INTRODUCTION

The clinical application of ^{177}Lu -Octreotate Peptide Receptor Radionuclide Therapy (PRRTs) is well-established. The relatively long physical half life of ^{177}Lu , along with the fact that it is both a beta and gamma emitter, necessitates investigation of the radiation burden to the personnel and caregivers involved.

PURPOSE

The purpose of this study was to measure the effective dose to the personnel per administered dose, as well as the effective dose to the caregivers during the immediate p.i. period.

MATERIALS & METHODS

Dosimetry measurements were performed for both personnel and caregivers.

# of administrations	45
dosimetric period	June '15 – December '15
personnel whole body dosimetry frequency	on a monthly basis
dose rate measurement at 1 m distance from the patient	0-30 min p.i. / 30-120 min p.i.
caregivers' dosimetric intervals (TLD-based)	0-3 days p.i. / 2-7 days p.i. / 0-7 days p.i.

RESULTS - PERSONNEL

average dose rate measurement at 1 m distance from the patient	0-30 min p.i. : 47 $\mu\text{Sv/h}$ (15-100 $\mu\text{Sv/h}$)
	30-120 min p.i.: 26 $\mu\text{Sv/h}$ (10-50 $\mu\text{Sv/h}$)
average dose	32.7 μSv /administered dose

RESULTS - CAREGIVERS

dosimetric period	average dose – range (mSv)
0-3 days p.i.	0.065 (0-0.14)
3-7 days p.i.	0.035 (0-0.15)
0-7 days p.i.	0.100 (0-0.29)

CONCLUSIONS

^{177}Lu -Octreotate PRRT can be safely performed on an outpatient basis, as long as individualised radiation protection instructions are provided and followed by the caregivers.