

# Somatostatin receptor PET ligands

PET with [somatostatin receptor ligand \[68Ga-DOTA-D-Phe1-Tyr3-octreotide\]](#) ([68Ga]Ga-DOTA-TOC) is an established method in [radiotherapy](#) planning because of the improved detection and delineation of [meningioma](#) tissue. Bashir et al. investigated the diagnostic accuracy of supplementary [68Ga]Ga-DOTA-TOC PET in patients with a 3-month postoperative MRI reporting gross-total resection (GTR).

Thirty-seven patients with a histologically proven [meningioma](#) and [GTR](#) on postoperative MRI were prospectively referred to [68Ga]Ga-DOTA-TOC PET. Detection and volume measurements of [68Ga]Ga-DOTA-TOC-avid lesions in relation to the primary tumor site were recorded. Residual tumor in suspicious lesions suggested by [68Ga]Ga-DOTA-TOC PET was verified by (i) [tumor recurrence](#)/progression on subsequent MRI scans according to the Response Assessment of Neuro-Oncology criteria, (ii) subsequent histology, and (iii) follow-up [68Ga]Ga-DOTA-TOC PET scan.

Twenty-three PET scans demonstrated [68Ga]Ga-DOTA-TOC-avid lesions suspicious of residual meningioma, where 18 could be verified by (i) tumor progression on subsequent MRI scans (n = 6), (ii) histologic confirmation (n = 3), and (iii) follow-up [68Ga]Ga-DOTA-TOC PET scans confirming the initial PET findings (n = 9) after an overall median follow-up time of 17 months (range, 9-35 months). In contrast, disease recurrence was seen in only 2 of 14 patients without [68Ga]Ga-DOTA-TOC-avid lesions (P < 0.0001). The sensitivity, specificity, and diagnostic accuracy of [68Ga]Ga-DOTA-TOC PET in detecting meningioma residue was 90% [95% confidence interval (CI), 67-99], 92% (95% CI, 62-100), and 90% (95% CI, 74-98; P < 0.0001), respectively.

The majority of patients with GTR on 3-month postoperative MRI may have small unrecognized meningioma residues that can be detected using [68Ga]Ga-DOTA-TOC PET <sup>1)</sup>.

<sup>1)</sup>

Bashir A, Larsen VA, Ziebell M, Fugleholm K, Law I. Improved Detection of Postoperative Residual Meningioma with [68Ga]Ga-DOTA-TOC PET Imaging using a High-resolution Research Tomograph PET Scanner. Clin Cancer Res. 2021 Feb 1. doi: 10.1158/1078-0432.CCR-20-3362. Epub ahead of print. PMID: 33526423.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

[https://neurosurgerywiki.com/wiki/doku.php?id=somatostatin\\_receptor\\_pet\\_ligands](https://neurosurgerywiki.com/wiki/doku.php?id=somatostatin_receptor_pet_ligands)

Last update: **2024/06/07 02:50**

