

# C-24

## Correlation of DOTATOC Uptake and Pathologic Grade in Neuroendocrine Tumors

*Hilary Chan<sup>1</sup>; Christian Moseley<sup>2</sup>; Katherine Van Loon<sup>1</sup>; Emily Bergsland<sup>1</sup>; Miguel Pampaloni<sup>1</sup>; Thomas Hope<sup>1</sup>*

*<sup>1</sup>University of California San Francisco; <sup>2</sup>Florida Atlantic University*

**BACKGROUND:** <sup>68</sup>Ga-DOTATOC is a somatostatin analog used to detect neuroendocrine tumors (NETs). The Ki-67 protein (Ki-67) is a marker of cell proliferation and has been established as both a diagnostic and prognostic factor in the treatment of NETs. We aimed to evaluate whether a correlation exists between Ki-67 and somatostatin receptor (SSTR) PET uptake (SUVmax).

**METHODS:** 238 consecutive DOTATOC PET scans between 2014 and 2016 were retrospectively reviewed. Patients were excluded if no pathology was available, tumors were fully resected prior to imaging, a correlate lesion between pathology and imaging could not be identified, or DOTATOC PET scan was >365 days from date of biopsy. The remaining 90 patients had pathology available, and 54 patients had Ki-67 available. DOTATOC uptake from biopsied lesions was measured and correlated with Ki-67.

**RESULTS:** For the 110 lesions from 90 patients with pathology available, DOTATOC PET had a 92.7% sensitivity and 100% specificity (102 true positives; 8 false negatives) for detection of NETs. In 54 patients, we were able to obtain Ki-67 values for 63 lesions for which we had corresponding SUVmax information. There was no correlation between Ki-67 and SSTR-PET uptake ( $r = -0.169$ ,  $p = 0.252$ ). There were 26 grade 1 lesions (mean Ki-67 1.1%; median SUVmax 27.8), 31 grade 2 lesions (mean Ki-67 8.0%; median SUVmax 26.5), and 6 grade 3 lesions (mean Ki-67 32.9%; median SUVmax 6.2).

**CONCLUSION:** Our analysis demonstrates a high sensitivity and specificity in DOTATOC PET imaging for detection of NETs and that there is no correlation between Ki-67 and SUVmax in NETs. In Grade 1 and 2 lesions SSTR-PET provides independent information from Ki-67 that can help guide clinical management and treatment.