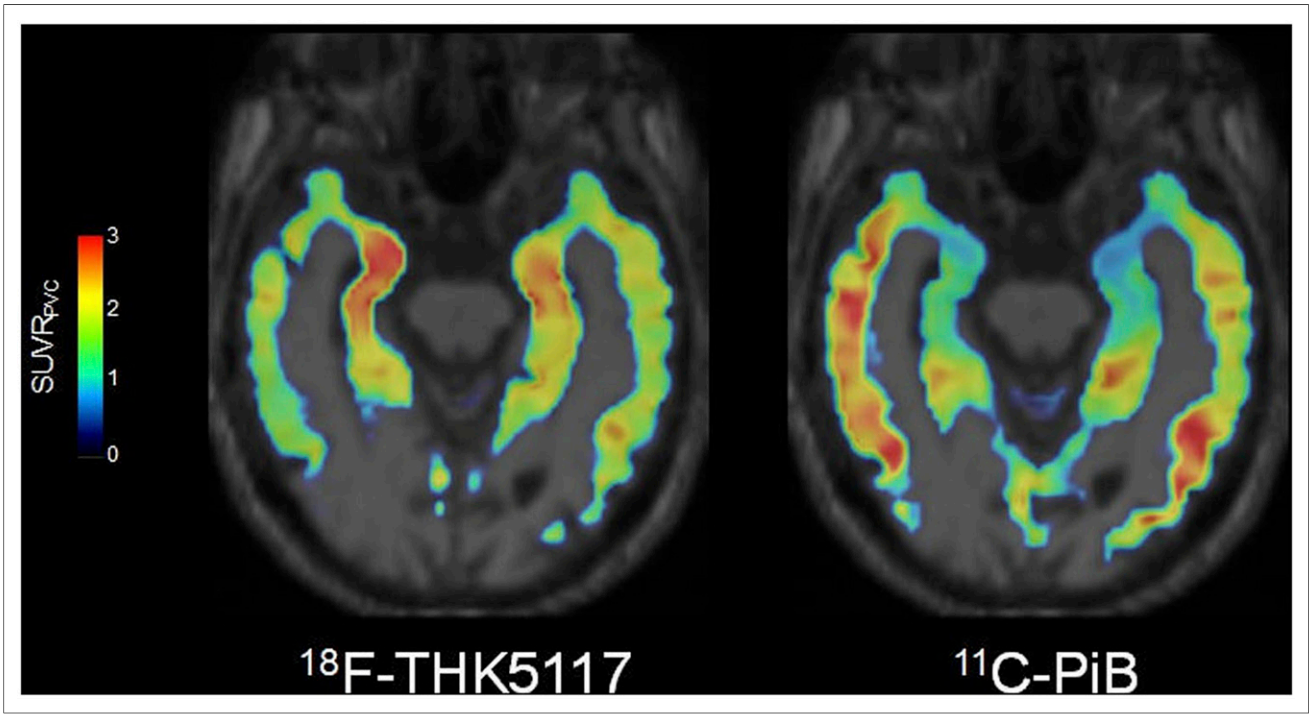
2014 SNMMI Image of the Year

As part of the SNMMI Annual Meeting Highlights Lectures, presented on June 11 in St. Louis, MO, the SNMMI Scientific Program Committee announced the selection of the 2014 Image of the Year. The highly anticipated and widely reported Image of the Year award went to Nobuyuki Okamura, MD, and colleagues from the Tohoku University School of Medicine and Tohoku University Hospital (Sendai, Japan). The group's presentation on "In vivo selective imaging of tau pathology in Alzheimer disease [AD] with ^{18}F-THK5117" focused on an assessment of ^{18}F-THK5117, a novel PET tracer that labels neurofibrillary tangles with high selectivity. To assess the clinical utility of the tracer, the researchers compared ^{18}F-THK5117 and ^{11}C-Pittsburgh compound B (^{11}C-PiB) PET images acquired in both healthy patients and individuals with AD. Individuals with AD showed ^{18}F-THK5117 retention in the lateral and medial temporal cortices, areas known to contain high concentrations of tau deposits, with standardized uptake values reaching a plateau at 60 minutes after injection. Regional brain distributions of ^{18}F-THK5117 and ^{11}C-PiB were quite different in AD, with ^{18}F-THK5117 retention in the temporal cortex closely correlated with severity of dementia. ^{18}F-THK5117 retention in the hippocampus was correlated with hippocampal volume in AD. The authors concluded that ^{18}F-THK5117 appears to selectively detect tau pathology in AD patients and that this tracer "could be employed to study longitudinal tau deposition in healthy aging and pathological conditions."

"The work of Dr. Okamura and his colleagues is at the forefront of research in tau deposition in AD," said Satoshi Minoshima, MD, PhD, chair of the SNMMI Scientific Program Committee. "Their work in developing this innovative tracer and in demonstrating differential distributions of amyloid tracer versus tau/neurofibrillary tangle tracer in AD patients is already helping to shed critical light into the pathogenesis and pathophysiology of AD and will help develop better diagnostic methods and effective treatments." Minoshima also pointed to the potential advantages accrued with an ^{18}F-labeled radiotracer, which may significantly improve access and availability for routine tau pathology assessment.



Differential distributions of the novel tau radiotracer ^{18}F-THK5117 (left) and ^{11}C-PiB (right) in a patient with AD