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Tau positron emission tomography harmonization using the CenTauR approach: General conversion equations, relevant cut-points, and external validation

Abstract

Introduction

Tau positron emission tomography (PET) tracers differ in kinetics, binding properties, and quantification pipelines, complicating cross-study comparisons. The CenTauR approach provides a unified framework for harmonizing tau PET quantification across tracers.

Methods

We defined a tracer-agnostic “Standard Method” using Statistical Parametric Mapping 12, standardized regions of interest, and harmonized acquisition parameters. Using data from five tau tracers—[18F]flortaucipir, [18F]MK-6240, [18F]PI-2620, [18F]RO948, and [18F]GTP1—we applied the Joint Propagation Model to derive linear equations converting regional standardized uptake value ratios into the tracer-independent CenTauR scale. Validation included independent cross-sectional, longitudinal, and test–retest datasets across multiple cohorts.

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