

Impact Of Amyloid Pet On Alzheimer's Disease Diagnosis And Clinical Management In A Developing-country Private Healthcare Setting

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Rafael Menezes Tavares¹, Camila Godoi Carneiro¹, Sonia Brucki², Marcelo Tatit Sapienza¹, Carlos Alberto Buchpiguel¹, Artur Martins Coutinho^{1*}
Nuclear Medicine Center and Division, Institute of Radiology (1); and Neurology Division (2),
Hospital das Clínicas, Faculdade de Medicina da Universidade de Sao Paulo (HC-FMUSP), Sao Paulo, Brazil. * *Poster presenter*

Amyloid PET increased significantly the diagnostic confidence and the specific treatment for AD in a private-setting Brazilian cohort, while decreasing the intention to perform invasive procedures; the cohort presented high A+ levels, as well as a high socioeconomic and educational profiles, a striking difference from regular research cohorts

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	
- Extracellular deposition of β-amyloid (Aβ) plaques is a hallmark of Alzheimer's Disease (AD) - Decade-long efforts have led to the integration of biomarkers into diagnostic criteria, emphasized in recent updates (Jack et al., 2024; Dubois et al., 2024). - Radiotracers targeting Aβ plaques (amyloid-PET) have significantly improved diagnostic accuracy and clinical management. The Amyloid Imaging Taskforce (AIT), the Society of Nuclear Medicine and Molecular Imaging (SNMMI), and the Alzheimer's Association (AA) developed Appropriate Use Criteria (AUC) for amyloid PET imaging to guide its clinical application. Aim: to characterize the clinical and sociodemographic profile of patients undergoing amyloid PET who met AUC for AD and were referred from non-academic private clinical practices in a Brazilian “real life” setting. Specific aims were: - To evaluate changes in etiologic diagnosis, Alzheimer's disease-specific pharmacological treatment, non-pharmacological management, and neuropsychiatric medications following amyloid PET; to investigate changes in diagnostic confidence after amyloid-PET - To determine the proportion of positive amyloid PET scans according to clinical indication in both cohorts; - To investigate the association between clinical condition and amyloid PET positivity, comparing the results with those reported in Brazilian public healthcare studies. - To explore specific socio-demographic characteristics of individuals referred for PET imaging in a private-sector context in a developing country.	- Retrospective cohort; N = 416 individuals referred from private clinics for amyloid PET with [11C]PiB between 2019 and 2024. - Detailed medical record review of a sub cohort (N =34). - The larger group was characterized by sex, age, clinical indication, and imaging results. - The smaller dataset was further assessed for changes in pharmacological and non-pharmacological management, primary etiological diagnosis, and confidence levels before and after PET. - Inferential statistical analysis was conducted to assess variations between pre and post-PET, employing the McNemar test for categorical variables and the Wilcoxon signed-rank test for numerical variables. Differences between proportional data were analyzed using the chi-square test (N=416) PET Amiloid enroled ↓ Imaging results Age Sex Clinical indications Smaller dataset with medical record review (N=34) → Imaging results Clinical indications Primary etiological diagnosis Clinical management Diagnostic confidence Sociodemographic features Medical history	Overall cohort - 416 patients (75.9%) were A+, female (58%), mean age of 69.4 $\pm$ 8.7 years. The most frequent indication (43%) was mild cognitive impairment of indeterminate etiology (MCIE). Smaller dataset (N=34) - 82,3% were A+, female (79.4%), higher educational attainment (76.5%) and upper socioeconomic class (97.1%). Primary diagnostic etiology (PDE) was changed in 35,3%, not statistically significant (p = 0.1) Significant modifications in pharmacological management (p = 0.013), including a trend towards reduced prescriptions of antidepressants (p = 0.063) Significant decrease in the intention to perform lumbar punctures (p = 0.039) Intention to perform neuropsychological assessments decreased (p = 0.070) The diagnostic confidence level was enhanced 43% following PET imaging (p < 0.0001) Main Diagnostic Hypothesis	Specific AD Medication Changes in Non Specific Managements Confidence Diagnostic Increase	- There was a predominance in women, with high educational profile, and a high prevalence of positive amyloid PET findings irrespective of the clinical indication, including MCI - Important insight into the demographic and clinical profile in the Brazilian private healthcare setting - Clinically meaningful impact on patient management by increasing etiologic diagnostic accuracy and reducing the use of potentially ineffective non-disease-specific interventions - Increase diagnostic confidence where diagnostic uncertainty may influence treatment decisions and long-term care planning - Greater diagnostic confidence facilitate appropriate management strategies and supports the integration into routine clinical practice
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