

Association of Cognitive Status and Amyloid PET Imaging in Geriatric Patients at St. Luke’s Medical Center, Global City – An Analytical Cross-Sectional Study

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This study explored the relationship between neurocognitive measures and amyloid PET imaging in Filipino older adults. While raw continuous scores didn't align, categorical MoCA interpretations significantly correlated with amyloid status. This suggests that accessible cognitive screening may help identify Alzheimer's pathology and support clinical decision-making, especially in resource-limited settings.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES																																																																																																
Amyloid positron emission tomography (PET) imaging serves as a well-established biomarker for Alzheimer’s disease pathology; however, its clinical utility is optimized when interpreted in conjunction with cognitive assessments. There is limited evidence connecting standardized neurocognitive measures to amyloid PET findings among Filipino older adults.	This retrospective study involved geriatric patients aged 60 years and older who were assessed at the Memory Clinic of St. Luke’s Medical Center – Global City. These patients underwent standardized cognitive evaluations, notably the Montreal Cognitive Assessment (MoCA), the Philippines adaptation of the MoCA (MoCA-P), and the Alzheimer’s Disease Assessment Scale–Cognitive Subscale (ADAS-Cog). Additionally, amyloid PET imaging was performed between January 2021 and May 2025. The amyloid PET results were classified as either amyloid-negative or amyloid-positive. The analysis included descriptive, bivariate, and multivariate methods, with the latter utilizing Firth penalized logistic regression adjusted for age, sex, and educational level.	A total of 22 patients were included in the study (mean age 74.0 ± 7.4 years), most of whom exhibited mild to moderate cognitive impairment. Amyloid PET imaging classified 15 patients (68.2%) as amyloid-negative and 7 patients (31.8%) as amyloid-positive. Categorically interpreting MoCA scores demonstrated a significant correlation with PET findings (p = 0.036), whereas continuous MoCA scores did not reach significance. No substantial associations were observed for MoCA-P or ADAS-Cog. Multivariate analysis did not identify any independent cognitive predictors of amyloid pathology. <table><caption>Table 2: Characteristics of the Patients at Baseline</caption><tr><th>Variable</th><th>n (%) or Mean ± SD / Median (IQR)</th></tr><tr><td>Age (years)</td><td>74.0 ± 7.4</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Male</td><td>12 (54.5)</td></tr><tr><td>Female</td><td>10 (45.5)</td></tr><tr><td>Educational attainment</td><td></td></tr><tr><td>College</td><td>11 (50.0)</td></tr><tr><td>Post-graduate</td><td>11 (50.0)</td></tr></table> <table><caption>Table 5.1 MoCA Interpretation (Valid n = 14; PET– n = 12, PET+ n = 2)</caption><tr><th>Category</th><th>PET Negative n (%)</th><th>PET Positive n (%)</th><th>Overall n (%)</th><th>p-value</th></tr><tr><td>Normal</td><td>0 (0.0)</td><td>1 (50.0)</td><td>1 (7.1)</td><td rowspan="3">0.036*</td></tr><tr><td>Mild</td><td>9 (75.0)</td><td>1 (50.0)</td><td>10 (71.4)</td></tr><tr><td>Moderate</td><td>3 (25.0)</td><td>0 (0.0)</td><td>3 (21.4)</td></tr><tr><td colspan="5">Mean ± SD</td></tr><tr><td>MoCA score</td><td>20.33 ± 4.64 (n = 12)</td><td>23.00 ± 7.07 (n = 2)</td><td>20.71 ± 4.8</td><td>0.688***</td></tr></table> <table><caption>Table 5.2 MoCA-P Interpretation (Valid n = 8; PET– n = 3, PET+ n = 5)</caption><tr><th>Category</th><th>PET Negative n (%)</th><th>PET Positive n (%)</th><th>Overall n (%)</th><th>p-value</th></tr><tr><td>Normal</td><td>1 (33.3)</td><td>2 (40.0)</td><td>3 (37.5)</td><td rowspan="3">0.714**</td></tr><tr><td>T/c Cognitive Impairment</td><td>2 (66.7)</td><td>3 (60.0)</td><td>5 (62.5)</td></tr><tr><td colspan="5">Mean ± SD</td></tr><tr><td>MoCA - P score</td><td>20.33 ± 2.52 (n = 3)</td><td>17.20 ± 7.33 (n = 5)</td><td>18.38 ± 5.93</td><td>0.420***</td></tr></table> <table><caption>Table 5.3 ADAS-Cog Interpretation (Valid n = 22; PET– n = 15, PET+ n = 7)</caption><tr><th>Category</th><th>PET Negative n (%)</th><th>PET Positive n (%)</th><th>Overall n (%)</th><th>p-value</th></tr><tr><td>(Within)Normal</td><td>8 (53.3)</td><td>3 (42.9)</td><td>11 (50.0)</td><td rowspan="4">0.893**</td></tr><tr><td>Mild</td><td>5 (33.3)</td><td>3 (42.9)</td><td>8 (36.4)</td></tr><tr><td>Moderate</td><td>2 (13.3)</td><td>1 (14.3)</td><td>3 (13.6)</td></tr><tr><td colspan="5">Median (IQR)</td></tr><tr><td>ADAS-Cog score</td><td>12.66 (8.67–18.30) (n=15)</td><td>15.33 (7.33–19.33) (n=7)</td><td>13.18 (8.59 – 18.56)</td><td>0.944*****</td></tr></table>	Variable	n (%) or Mean ± SD / Median (IQR)	Age (years)	74.0 ± 7.4	Sex		Male	12 (54.5)	Female	10 (45.5)	Educational attainment		College	11 (50.0)	Post-graduate	11 (50.0)	Category	PET Negative n (%)	PET Positive n (%)	Overall n (%)	p-value	Normal	0 (0.0)	1 (50.0)	1 (7.1)	0.036*	Mild	9 (75.0)	1 (50.0)	10 (71.4)	Moderate	3 (25.0)	0 (0.0)	3 (21.4)	Mean ± SD					MoCA score	20.33 ± 4.64 (n = 12)	23.00 ± 7.07 (n = 2)	20.71 ± 4.8	0.688***	Category	PET Negative n (%)	PET Positive n (%)	Overall n (%)	p-value	Normal	1 (33.3)	2 (40.0)	3 (37.5)	0.714**	T/c Cognitive Impairment	2 (66.7)	3 (60.0)	5 (62.5)	Mean ± SD					MoCA - P score	20.33 ± 2.52 (n = 3)	17.20 ± 7.33 (n = 5)	18.38 ± 5.93	0.420***	Category	PET Negative n (%)	PET Positive n (%)	Overall n (%)	p-value	(Within)Normal	8 (53.3)	3 (42.9)	11 (50.0)	0.893**	Mild	5 (33.3)	3 (42.9)	8 (36.4)	Moderate	2 (13.3)	1 (14.3)	3 (13.6)	Median (IQR)					ADAS-Cog score	12.66 (8.67–18.30) (n=15)	15.33 (7.33–19.33) (n=7)	13.18 (8.59 – 18.56)	0.944*****	Categorically interpreting the MoCA may be associated with amyloid PET findings in Filipino older adults. Cognitive assessments remain essential, particularly in resource-limited settings. Additional research with larger sample sizes is advised to validate these findings.	Chételat, G., Arbizu, J., Barthel, H., Garibotto, V., Law, I., Morbelli, S., Van De Giessen, E., Agosta, F., Barkhof, F., Brooks, D. J., Carrillo, M. C., Dubois, B., Fjell, A. M., Frisoni, G. B., Hansson, O., Herholz, K., Hutton, B. F., Jack, C. R., Lammertsma, A. A., ... Drzezga, A. (2020). Amyloid-PET and 18F-FDG-PET in the diagnostic investigation of Alzheimer's disease and other dementias. <i>The Lancet Neurology</i>, 19(11), 951–962. https://doi.org/10.1016/S1474-4422(20)30314-8 Spano, M., Roytman, M., Abolan, M., Saboury, B., Franceschi, A., & Chiang, G. C. (2023). Brain PET imaging: Approach to cognitive impairment and dementia. <i>PET Clinics</i>, 18(1), 103–113. https://doi.org/10.1016/j.ppet.2022.09.006 Lesman-Segev, O. H., La Joie, R., Iaccarino, L., Lobach, I., Rosen, H. J., Seo, S. W., Janabi, M., Baker, S. 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