

Evidence from Indonesia: Alzheimer’s Disease Diagnostic Delay and Determinants Within a High-vascular-burden Tertiary Setting

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The range of AD diagnostic time varies widely in Indonesia (0-17 years), with a median of 1.8 years. Males were associated with lower odds of diagnostic delay though the association became insignificant in sensitivity analysis due to smaller sample size. However, the large number of patients with diagnostic delay highlights the need to strengthen the healthcare infrastructure for early AD detection. A national multi-center study is needed to capture comprehensive determinants influencing AD diagnostic delay in Indonesia.

INTRODUCTION	METHODS	RESULTS																																							
Despite decades of Alzheimer’s Disease (AD) research, Southeast Asian populations remain underrepresented, particularly in middle-income countries with high vascular burden such as Indonesia. In Indonesia, evidence on AD diagnostic delay and its determinants is limited. Therefore, a study to quantify the AD diagnostic time and to identify determinants of diagnostic delay in Indonesia is needed.	This hospital-based cross-sectional study collected retrospective data (January 2022-December 2025) from the electronic medical records of Indonesia's national neurology referral center. Clinical data were extracted using regular expressions in Python before further manual validation. A logistic regression was performed to identify the determinants of diagnostic delay-defined as diagnosed ≥2 years after onset of first symptom (based on sample distribution and prior literature). Included possible factors were demographic factors (elderly (≥60-years), gender, education level), healthcare access factor (source of referral), socioeconomic factor (insurance type), and clinical factor (presence of any vascular comorbidities). A sensitivity analysis in a model without extreme diagnostic time (>5 years, n=23) was performed.	Table 1. Characteristics of Alzheimer’s Disease Patients in Indonesia’s National Brain Center Hospital Based on Diagnostic Delay (2022-2025)																																							
		<table><tr><th>Characteristics</th><th>Diagnosed <2 years since onset of symptom (n=139)</th><th>Diagnosed ≥2 years since onset of symptom (n=84)^a</th><th>Diagnosed ≥6 years since onset of symptom (n=23)</th></tr><tr><td>Age (Median, IQR)</td><td>70 (62-77)</td><td>68 (61-77)</td><td>68 (60-76)</td></tr><tr><td>Elderly (%)</td><td>117 (84)</td><td>66 (79)</td><td>17 (74)</td></tr><tr><td>Males (%)</td><td>74 (53)</td><td>34 (40)</td><td>8 (35)</td></tr><tr><td>≥ 12 years of education (%)</td><td>113 (81)</td><td>70 (83)</td><td>22 (96)</td></tr><tr><td>Present any vascular comorbidities (%)</td><td>100 (72)</td><td>59 (70)</td><td>19 (83)</td></tr><tr><td>National Insurance Coverage User (%)</td><td>103 (74)</td><td>65 (77)</td><td>17 (74)</td></tr><tr><td>Referred from other hospital (%)</td><td>48 (35)</td><td>26 (31)</td><td>8 (35)</td></tr><tr><td>Diagnostic Time (Median, IQR)</td><td>0.92 (0.54-1.84)</td><td>3.68 (2.76-5.52)</td><td>6.44 (6.36-10.58)</td></tr></table>				Characteristics	Diagnosed <2 years since onset of symptom (n=139)	Diagnosed ≥2 years since onset of symptom (n=84) ^a	Diagnosed ≥6 years since onset of symptom (n=23)	Age (Median, IQR)	70 (62-77)	68 (61-77)	68 (60-76)	Elderly (%)	117 (84)	66 (79)	17 (74)	Males (%)	74 (53)	34 (40)	8 (35)	≥ 12 years of education (%)	113 (81)	70 (83)	22 (96)	Present any vascular comorbidities (%)	100 (72)	59 (70)	19 (83)	National Insurance Coverage User (%)	103 (74)	65 (77)	17 (74)	Referred from other hospital (%)	48 (35)	26 (31)	8 (35)	Diagnostic Time (Median, IQR)	0.92 (0.54-1.84)	3.68 (2.76-5.52)	6.44 (6.36-10.58)
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