

Regional Variability in Alzheimer’s Disease Clinical Trials: Design Features and Population Insights

P4-01

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US/Canada➡biomarker-driven early innovation; Asia-Pacific ➡large-scale late-phase trials; Europe ➡rigorous RCTs
Western regions favor blinded RCTs and biomarkers, while Asia-Pacific emphasizes clinical endpoints and operational scale
Tailored regional approaches are essential to optimize global AD trial design and execution

INTRODUCTION

Alzheimer’s disease (AD) is a leading cause of dementia worldwide, yet clinical development strategies differ significantly across regions[2,4].

Understanding these variations is essential for optimizing trial design, patient recruitment, and biomarker integration.

This analysis examines exclusive interventional AD trials in Europe, US/Canada, and Asia-Pacific, focusing on design features, endpoints, and study populations[5].

METHODS

Interventional AD trials were extracted from Citeline (Trialtrove® | Citeline 2026) [5] and filtered to exclude observational and behaviour-focused studies.

Exclusive trials - conducted entirely within one geographical region (Latin America excluded due to only one trial) - were categorized by phase, masking, control type, primary endpoints, biomarker usage, PET imaging, clinical scales, and population stage (e.g., MCI due to AD, mild AD, mild–moderate AD).

Data was aggregated and summarized in comparative tables and visualized using charts.

RESULTS

A total of 170 exclusive trials were identified: US/Canada (81), Asia-Pacific (66), and Europe (23).

Design rigor: Europe and US/Canada favor double-blind, placebo-controlled randomized trials; Asia-Pacific includes more open-label designs alongside Phase III programs.

Endpoints: Safety/tolerability dominates early-phase trials. US/Canada leads in biomarker-driven endpoints, including tau PET as primary in mechanistic studies. Asia-Pacific emphasizes clinical scales (ADAS-Cog, CDR-SB) for efficacy, while Europe uses these scales mainly as secondary endpoints.

Biomarkers and imaging: Plasma biomarkers (p-tau, GFAP, NfL) are widely used as secondary endpoints across all regions. US/Canada integrates CSF biomarkers and PK/PD profiling more frequently. PET imaging strategies differ: tau PET and amyloid PET are common in US/Canada, amyloid PET is used in Asia-Pacific diagnostic trials, and Europe applies synaptic PET (SV2A) and MRI measures as secondary endpoints.

Population insights: US/Canada concentrates on MCI due to AD and early symptomatic cohorts, reflecting mechanistic and prevention strategies. Asia-Pacific shows the highest number of trials in mild–moderate AD and general MCI, supporting large-scale efficacy programs. Europe focuses on mild AD and MCI, with limited preclinical enrolment.

Feature	Europe (n=23)	US/Canada (n=81)	Asia-Pacific (n=66)
Biomarker Use	Plasma p-tau, GFAP, NfL (mostly secondary)	Plasma & CSF p-tau, GFAP, NfL; frequent PK/PD	Plasma p-tau, GFAP, NfL (secondary)
PET Imaging	Synaptic PET (SV2A) as secondary; rare amyloid/tau PET	Tau PET and amyloid PET often primary in mechanistic studies	Amyloid PET in diagnostic trials; tau PET rare
Clinical Scales	ADAS-Cog, CDR-SB, MMSE (mostly secondary)	CDR-SB, ADAS-Cog, iADRS (efficacy endpoints)	ADAS-Cog, CDR-SB, MMSE as primary in Phase III
Primary Endpoints	Safety/tolerability dominant; few efficacy primaries	Safety plus biomarker-driven endpoints (tau PET, PK/PD)	Clinical scales (ADAS-Cog, CDR-SB) and safety
Design Rigour	Double-blind, placebo-controlled Phase II RCTs	High proportion of double-blind, placebo-controlled; some crossover	Mix of double-blind and open-label; more Phase III

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EXCLUSIVE TRIALS BY REGION: PRIMARY ENDPOINTS

EXCLUSIVE TRIALS: ALZHEIMER’S STUDY POPULATIONS BY REGION

EXCLUSIVE TRIALS BY REGION: PHASE DISTRIBUTION

CONCLUSIONS

Regional differences in Alzheimer’s trial design and population targeting underscore the need for tailored global strategies.

US/Canada drives biomarker-rich, mechanistic innovation; Asia-Pacific offers operational breadth for late-phase efficacy trials; and Europe prioritizes rigorous RCTs in mild AD.

These insights can guide site selection, protocol harmonization, and resource allocation for future AD programs. [2,5]

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