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Multi-Center Study of Natural History in Atypical Parkinsonian Syndromes (MAPS-NH)

Lead Institution: The Second Affiliated Hospital of Soochow University
Principal Investigator: Chunfeng Liu
Department: Neurology
Contact: +8613606210609
Participating Institutions:

The Forth Affiliated Hospital of Soochow University
Changshu Hospital Affiliated to Nanjing University of Chinese Medicine
Affiliated Hospital of Yangzhou University
Jiangsu Province Official Hospital
Yancheng Third People's Hospital
The Second People's Hospital of Huai'an
The Forth People's Hospital of Zhenjiang
Jiangsu Province (Suqian) Hospital
The Second Affiliated Hospital of Xuzhou Medical University
The First People's Hospial of Kunshan
Jiaxing Second Hospital
Zhangjiagang TCM Hospital Affiliated to Nanjing University of Chinese Medicine/Zhangjiagang Traditional Chinese Medicine Hospital
The Second Affiliated Hospital of Nantong University
Yantai Yuhuangding Hospital
Mianyang 404 Hospital

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Study Title	Multi-Center Study of Natural History in Atypical Parkinsonian Syndromes (MAPS-NH)
Objectives	1. Investigate natural history differences in APS (MSA, DLB, PSP, CBD) progression (e.g., motor/non-motor symptom rates, imaging evolution). 2. Establish standardized APS assessment protocols. 3. Build clinical/biomarker databases to identify predictive biomarkers.
Design	Patients diagnosed with multiple system atrophy (MSA), dementia with Lewy bodies (DLB), progressive supranuclear palsy (PSP), or corticobasal degeneration (CBD) according to Chinese/international consensus diagnostic criteria. Follow-up period: 3–5 years, with clinical phenotypes and/or biomarkers assessed every 6 months (see study protocol for details). **Analysis**: Machine learning-driven trajectory modeling to identify disease subtypes and critical progression milestones.
Sample Size	500
Inclusion Criteria and Exclusion Criteria	Inclusion Criteria: 1.MSA: Meets the "probable MSA" criteria in the 2022 Chinese expert consensus on MSA diagnosis (MSA-P or MSA-C subtype); disease duration ≤3 years (from onset of first motor symptoms). 2.DLB: Meets "probable DLB" criteria per the 2017 McKeith diagnostic criteria; MMSE ≥18 (to exclude severe dementia confounding assessment). 3.PSP: Meets "probable PSP-Richardson syndrome" criteria per the 2017 PSP diagnostic standards; vertical gaze palsy or postural instability with duration ≤2 years. 4.CBD: Meets "probable CBD" criteria per the 2019 Chinese expert consensus on corticobasal degeneration diagnosis and treatment;

	asymmetric cortical symptoms (apraxia/dystonia/alien limb).
	Exclusion Criteria: 1.Parkinson's disease, spinocerebellar ataxia (SCA) and other secondary autonomic failure. 2.Vascular parkinsonism, Parkinsonism caused by stroke, tumor, or immune-mediated encephalitis.
Intervention	Observational only (no therapeutic interventions).
Statistical Methods	Machine Learning-Driven Trajectory Modeling: Utilizes time-series analysis and deep learning algorithms to: Analyze progression rate differences among heterogeneous disease subtypes (e.g., PSP-RS vs PSP-PGF). Identify critical transition points (e.g., predictive windows for rapid conversion from mild cognitive fluctuations to dementia in DLB). Stratified Management Strategy: Establishes a prognostic stratification model based on biomarker combinations (e.g., CSF NfL + midbrain atrophy rate). Aims to optimize enrollment criteria for future clinical trials. Key Terms & Contextual Notes:
Duration	September 1, 2025 – August 31, 2030