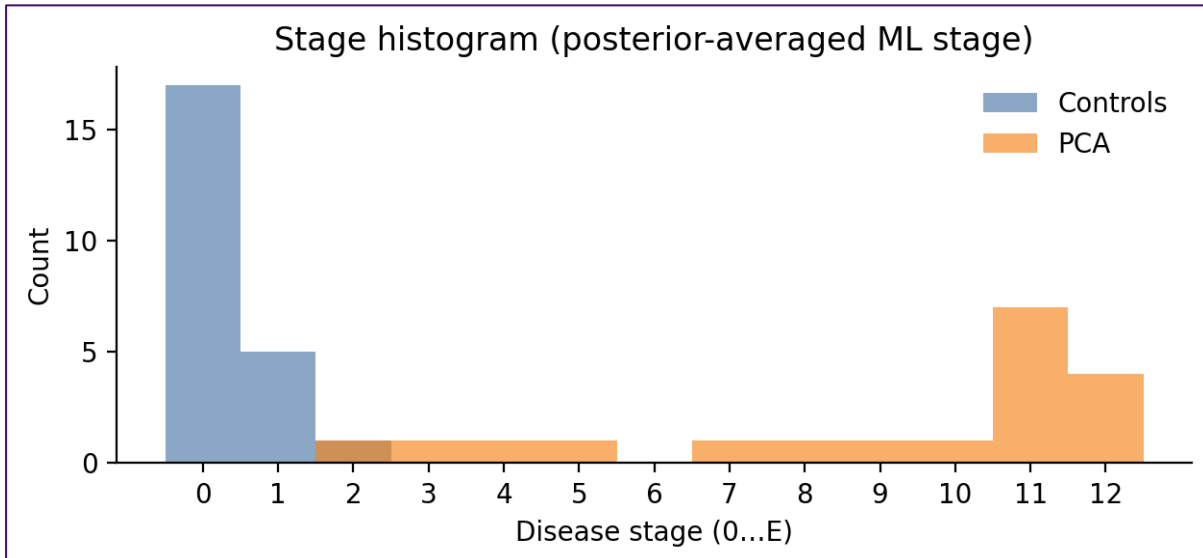


Baseline Characteristics and EBM Staging in a Prospective Study of Posterior Cortical Atrophy Syndrome For Trial Readiness (TRAC-PCA Study)

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Standard AD outcomes capture key aspects of PCA but do not fully reflect the phenotype. PCA-specific outcomes and cognitive EBM staging may improve clinical trial readiness.

INTRODUCTION	METHODS	RESULTS	RESULTS	REFERENCES																																											
Posterior Cortical Atrophy (PCA) is a rare, atypical Alzheimer’s disease (AD) phenotype that remains largely excluded from AD clinical trials due to prominent visual dysfunction and due to a limited data regarding outcome measures and disease staging. We report baseline characteristics and outcome measures from an NIH-sponsored PCA trial-readiness study (TRAC-PCA), including cognitive event-based model (EBM)-derived stages.	Nineteen participants meeting criteria for PCA completed baseline assessments of Mini-Mental State Examination [MMSE], Alzheimer’s Disease Assessment Scale-Cognitive subscale [ADAS-Cog13], Addenbrooke’s Cognitive Examination [ACE-III]), Clinical Dementia Rating-Sum of Boxes [CDR-SB], Alzheimer’s Disease Cooperative Study-Activities of Daily Living [ADCS-ADL], Functional Activities Questionnaire [FAQ]), Neuropsychiatric Inventory [NPI-12], Zarit Burden Interview [ZBI]). PCA-targeted assessments included the Colorado Posterior Cortical Questionnaire (CPC-Q), the Self-Assessment Questionnaire of Perceptual Abilities (Q-ACP), a luminance increment detection in noise (LIDN) task, and threshold-based Graded Incomplete Letters Test (GILT). A cognitive EBM was trained on the PCA participants and healthy controls (n=23) using 12 cognitive measures.	PCA cohort: Mean age 67.8 years (SD=7.0); 73.7% female; education averaged 16.5 years (2.1); symptom duration averaged 74.0 months (35.1). Mean scores: MMSE 21.4 (5.3), ACE-III 66.9 (21.2), ADAS-Cog13 28.8 (13.1), CDR-SB 4.2 (2.8), ADCS-ADL 60.0 (14.1), FAQ(n=17) 18.7 (5.6), ZBI 22.1 (11.4), CPC-Q 30.0 (7.9), Q-ACP 16.2 (6.6), 60% GILT (n=16) 26.7(50.4); successful completion of LIDN for 17/19. After Bonferroni correction, cognitive measures were intercorrelated and associated with CDR-SB, and functional measures were intercorrelated. ZBI, NPI, Q-ACP, and CPC-Q did not correlate with any measures, while GILT correlated only with ACE-III. Staging for PCA ranged from 1-12, while 74% of controls staged at 0. EBM measure ordering was stable, with graded difficulty arithmetic test earliest and digit span forwards latest.	Stage histogram (posterior-averaged ML stage) <table><caption>Stage histogram data (approximate)</caption><tr><th>Disease stage (0...E)</th><th>Controls Count</th><th>PCA Count</th></tr><tr><td>0</td><td>16</td><td>0</td></tr><tr><td>1</td><td>5</td><td>0</td></tr><tr><td>2</td><td>0</td><td>1</td></tr><tr><td>3</td><td>0</td><td>1</td></tr><tr><td>4</td><td>0</td><td>1</td></tr><tr><td>5</td><td>0</td><td>1</td></tr><tr><td>6</td><td>0</td><td>1</td></tr><tr><td>7</td><td>0</td><td>1</td></tr><tr><td>8</td><td>0</td><td>1</td></tr><tr><td>9</td><td>0</td><td>1</td></tr><tr><td>10</td><td>0</td><td>1</td></tr><tr><td>11</td><td>0</td><td>7</td></tr><tr><td>12</td><td>0</td><td>4</td></tr></table> Posterior-averaged maximum-likelihood stages: - Controls (n=23): stage 0:17, stage 1:5, stage 2:1 (no controls ≥ 3) - Colorado PCA (n=19): stage 2:1, 3:1, 4:1, 5:1, 7:1, 8:1, 9:1, 10:1, 11:7, 12:4 Interpretation After filtering, controls cluster tightly at very early stages, and the patient-control separation remains strong.	Disease stage (0...E)	Controls Count	PCA Count	0	16	0	1	5	0	2	0	1	3	0	1	4	0	1	5	0	1	6	0	1	7	0	1	8	0	1	9	0	1	10	0	1	11	0	7	12	0	4	CONCLUSIONS Our data support the relevance and feasibility of using standard AD outcomes in PCA, while PCA-specific measures may capture domains not assessed by standard AD outcomes. Notably, no measure was associated with PCA caregiver burden. Cognitive EBM staging demonstrated strong PCA and control separation, supporting its potential utility for clinical trials. Longitudinal follow-up is planned.	CONTACT The Colorado PCA Support Pages  Web-based Visual Cortical Screening Battery (VisCorD)  
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