

Supplementary Material

Cerebrospinal Fluid Amyloid- β Oligomer Levels in Patients with Idiopathic Normal Pressure Hydrocephalus

Supplementary Table 1. Correlations (R) between age and CSF biomarker levels in each group

	R (p)			
	Aβ₄₂	AβO¹⁰⁻²⁰	pTau	Tau
All individuals	-0.093 (0.331)	-0.039 (0.677)	0.022 (0.814)	0.169 (0.077)
iNPH cohort-1	0.111 (0.546)	0.113 (0.537)	0.119 (0.516)	-0.090 (0.637)
iNPH cohort-2	-0.433 (0.139)	-0.238 (0.433)	-0.237 (0.436)	-0.240 (0.429)
HCs	-0.052 (0.796)	-0.211 (0.291)	-0.138 (0.492)	0.342 (0.081)
AD	-0.051 (0.851)	-0.361 (0.169)	-0.103 (0.704)	0.137 (0.625)
PD	-0.222 (0.446)	-0.371 (0.173)	0.381 (0.161)	0.441 (0.115)
PSP	-0.358 (0.309)	-0.440 (0.152)	0.234 (0.465)	0.248 (0.437)

Pearson's product-moment correlation was performed. AD, Alzheimer's disease; A β , amyloid- β ; A β O¹⁰⁻²⁰, amyloid- β oligomer¹⁰⁻²⁰; CSF, cerebrospinal fluid; iNPH, idiopathic normal pressure hydrocephalus; HCs, healthy controls; PD, Parkinson's disease; PSP, progressive supranuclear palsy; pTau, phosphorylated tau

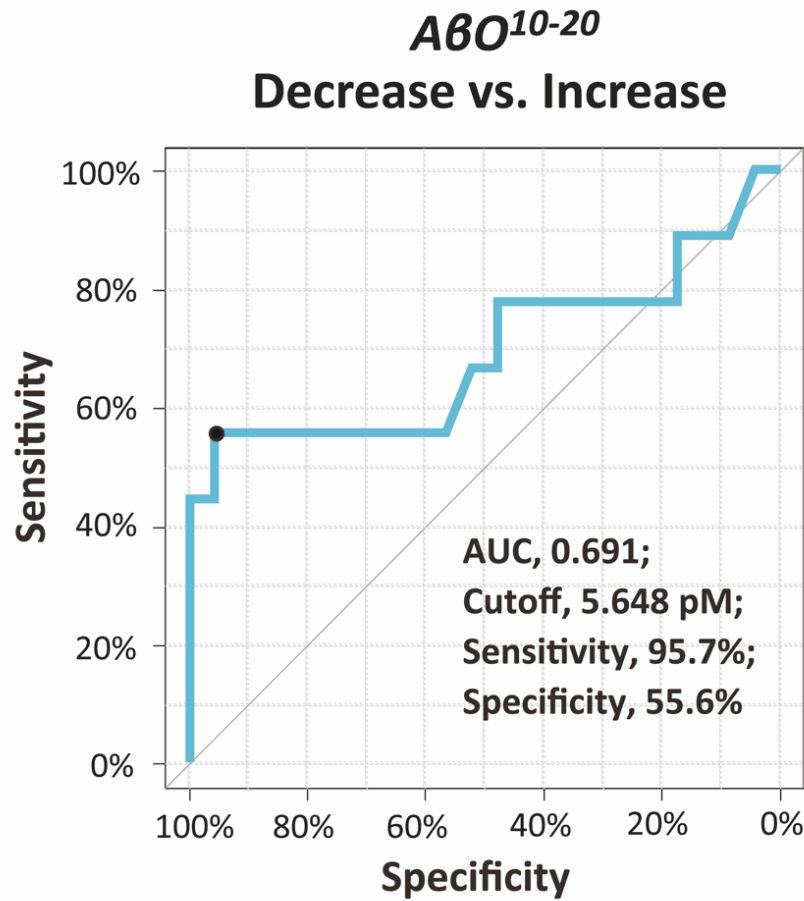
Supplementary Table 2. Comparison between A β O¹⁰⁻²⁰ decrease subgroup and A β O¹⁰⁻²⁰ increase subgroup

	A β O ¹⁰⁻²⁰ decrease (n = 23)	A β O ¹⁰⁻²⁰ increase (n = 9)	p
Before surgery			
Age, mean \pm SD	75.96 \pm 3.80	75.67 \pm 3.24	0.842
Sex, Male (number (%))	14 (60.9)	6 (66.7)	1
mRS score, median [25% – 75%]	3 [2 – 3]	3 [2 – 3]	0.962
Evans Index, mean \pm SD	0.351 \pm 0.029	0.341 \pm 0.025	0.343
DESH, number (%)	20 (87)	9 (100)	0.541
White matter change, number of DSWMH score 2-4 (%)	13 (56.5)	7 (77.8)	0.422
Comorbidities (number (%))			
Hypertension	10 (43.5)	6 (66.7)	0.433
Diabetes	3 (13)	1 (11.1)	1
Dyslipidemia	8 (34.8)	3 (33.3)	1
Cardiac diseases	0 (0)	1 (11.1)	0.281
Stroke	3 (13)	0 (0)	0.541
iNPHGS score, Median [25% – 75%]			
Total score	5 [4 – 6]	5 [5 – 6]	0.732
Gait disturbance	2 [2 – 2.5]	2 [1 – 3]	0.645
Cognitive impairment	1 [1 – 2]	2 [1 – 2]	0.214
Urinary incontinence	2 [1 – 2]	2 [1 – 2]	0.548
1 year after surgery			
mRS score, median [25% – 75%]	2 [1 – 2]	1 [1 – 3]	0.754
iNPHGS score, Median [25% – 75%]			
Total score	3 [2 – 4]	3 [2 – 5]	0.536
Gait disturbance	1 [1 – 2]	1 [1 – 2]	0.735
Cognitive impairment	1 [1 – 1]	1 [0 – 1]	0.488
Urinary incontinence	1 [1 – 2]	1 [1 – 1]	0.442
3 years after surgery			
mRS score, median [25% – 75%]	2 [2 – 2.5]	2 [1 – 2]	0.445
iNPHGS score, Median [25% - 75%]			
Total score	4 [3 – 5]	3 [2 – 5]	0.750
Gait disturbance	1 [1 – 2]	1 [1 – 2]	0.963

Cognitive impairment	1 [1 – 1]	1 [1 – 2]	0.758
Urinary incontinence	1 [1 – 2]	1 [0 – 2]	0.619

A β ¹⁰⁻²⁰, amyloid- β oligomer¹⁰⁻²⁰; DESH, disproportionately enlarged subarachnoid space hydrocephalus; DSWMH, deep subcortical white matter hyperintensities; iNPHGS, idiopathic normal pressure hydrocephalus grading scale; mRS, modified Rankin Scale

Supplementary Figure 1. AUROC analysis in study 3



AUROC analysis of $A\beta O^{10-20}$ levels as tools for differentiating $A\beta O^{10-20}$ decrease and increase subgroup. $A\beta O^{10-20}$ levels differentiated members of $A\beta O^{10-20}$ decrease subgroup from members of the $A\beta O^{10-20}$ increase group with an AUC value of 0.691. AUC, area under the curve; $A\beta O^{10-20}$, amyloid- β oligomer¹⁰⁻²⁰