

## Supplemental Material

**Supplemental Table 1.** Psychosis subtype by individual pathology groups

	AD (111)	LBD/AD (59)	PSP (63)	Pick's (26)	CBD (44)	TDP- A (17)	TDP- B (33)	TDP- C (19)
Psychosis %	22.5	55.9	22.2	23.1	9.1	52.9	42.4	31.6
Delusions %	16.2	25.9	12.7	15.4	2.3	35.3	36.4	31.6
Hallucination %	13.5	48.3	22.2	11.5	9.1	23.5	30.3	5.3
Both del and hal	7.2	25.9	14.3	3.8	2.3	5.9	24.2	5.3
Delusion 1 <sup>st</sup> Sx	0	3.4	0	3.8	0	5.9	12.1	0
Delusion first 3 years	1.8	10.2	4.8	7.7	2.3	23.5	18.2	0
>1 subtype del	6.8	20	5.3	0	0	21.4	25.8	5.3
Hallucination 1 <sup>st</sup> Sx	0.9	3.4	0	0	0	0	9.1	0
Hallucination 1 <sup>st</sup> 3 years	5	28.8	9.5	4.3	2.3	33.3	20.7	0
>1 Hallucination	10	35.2	6.3	0	9.1	8.3	13.8	0
Hallucination subtypes								
Shape	3.7	12.5	0	3.8	2.3	0	3	0
Corner of Eye	1.8	17.5	0	0	4.5	0	3	0
Moves	2.8	14.3	0	3.8	2.3	0	0	0
Animal	3.7	16.1	4.8	0	6.8	11.8	9.1	5.3
Insect	5.6	7.3	1.6	0	0	0	3	0
Object	2.8	10.7	0	0	0	0	0	0
Perception	3.7	19.6	3.2	0	4.5	11.8	9.1	0
Person	7.3	32.1	11.3	0	4.5	6.3	9.7	0
Sound	1.8	3.5	4.8	4	0	0	3	0
Voice	1.8	3.6	1.6	0	2.3	5.9	3	0
Smell	0	1.8	0	4	0	0	0	0

Taste	0	0	0	0	0	0	0	0
Touch	0	3.5	0	0	0	0	3	0
Delusion subtypes								
Non Bizarre	12.7	29.3	14.3	15.4	2.3	35.3	37.5	31.6
Bizarre	3.6	6.9	1.6	0	0	5.9	9.4	5.3
Paranoid non bizarre	9.1	19	9.5	15.4	2.3	29.4	28.1	21.1
Paranoid bizarre	0.9	1.7	0	0	0	0	3.1	0
Ideas of reference	1.8	1.7	0	0	0	0	3	0
Erotomania	0	0	0	0	0	5.9	6.1	5.3
Misidentification	4.5	13.8	0	0	0	17.6	6.1	0
Capgras	0	1.7	0	0	0	0	3.1	0
Fregoli	0	0	0	0	0	0	0	0
Intermetamorphosis	0	0	0	0	0	0	0	0
Hyperfamiliarity	0.9	0	0	0	0	0	0	0
Object	0	1.7	0	0	0	0	0	0
Place	2.7	10.3	4.8	0	0	0	0	0
Reduplicative paramnesia	0.9	3.4	1.6	0	0	0	0	0
Own House	1.8	6.9	3.2	0	0	0	0	0
Misidentification of limb	0	0	1.6	0	0	0	0	0
Feelling of presence	0.9	15.5	3.2	0	0	0	3.1	0
Suspicion	2.7	5.2	1.6	11.5	0	5.9	6.3	5.3
Grandiose	1.8	0	0	0	0	0	9.4	5.3
Adultery	0.9	5.2	3.2	0	0	5.9	6.3	5.3
Persecutory	1.8	8.5	3.2	7.7	2.3	11.8	15.2	15.8
Theft	0	3.4	1.6	3.8	2.3	5.9	0	10.5
Intrusion	0.9	5.2	0	0	0	0	12.5	5.3

Hurt	0.9	5.2	1.6	3.8	0	5.9	6.3	5.3
Somatic	0	0	1.6	0	0	5.9	3.1	0
Harmful	4.5	6.8	4.8	11.5	0	17.6	21.2	5.3

## Appendix A

### **Neuropathological assessment**

Initial brain cutting and fixation procedures varied depending on the time and location of the evaluation. For most cases, the fresh brain was cut into 1-cm thick coronal slabs, which were alternately fixed in 10% neutral buffered formalin for 72 hours or rapidly frozen. Basic and immunohistochemical stains were applied to 8 µm thick sections cut from 25 tissue blocks dissected from the fixed slabs, covering dementia-related regions of interest and following standard diagnostic procedures (Montine *et al.*, 2012). Immunohistochemistry was performed using antibodies to: TDP-43 (1:2000, Proteintech Group, Chicago, IL, USA), hyperphosphorylated tau (CP-13 antibody, courtesy of P. Davies, NY), beta-amyloid (4G8, 1:250, Millipore, Billerica, MA, USA), alpha synuclein (1:1000, syn211, 36-008, Millipore, Billerica, MA, USA). For all antibodies, immunoperoxidase staining was performed using an avidin-biotin complex detection system (Vectastain ABC kit; Vector Laboratories, Burlingame, CA, USA) with 3,3 diaminobenzidine as the chromogen. Slides were pretreated for antigen retrieval by immersion in citrate pH 6.0 in an autoclave at 121° C for 5 min. The primary antibodies were incubated overnight at 4°C and species-specific biotinylated secondary antibodies were incubated for one hour at room temperature. All immunohistochemical runs included positive control sections to exclude technical factors as a cause of absent immunoreactivity.