**Supplementary Material**

**Supplementary Table 1** Interpretation of CSF biomarkers based on both the IWG-2 and NIA-AA criteria.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **CSF Aβ1-42** | **CSF Tau or P-tau181** |
| **IWG-2 criteria** | Suggestive for AD | Positive | Positive |
| Not suggestive for AD | Positive  Negative | Negative  Positive |
|  |  | Negative | Negative |
|  |  |  |  |
| **NIA-AA criteria** | High likelihood of AD | Positive | Positive |
| Intermediate likelihood of AD | Positive  Negative | Negative  Positive |
| Low likelihood of AD | Negative | Negative |

A positive marker is observed as one biomarker is positive/abnormal. A negative marker is observed as all biomarkers are negative/abnormal. For CSF biomarkers:

AD CSF biomarker profile following the IWG-2 criteria is considered to be suggestive for AD if CSF Aβ1-42 is positive/abnormal, in combination with positive/abnormal T-tau and/or P-tau181 values. In all other cases, the CSF biomarker profile is not suggestive for AD.

AD CSF biomarker profile following the NIA-AA criteria has a high likelihood of AD if both amyloid and neuronal injury markers are positive/abnormal, whereas the low likelihood is if both markers are negative. Intermediate likelihood is if only one of both was positive.

Aβ1-42, amyloid-β of 42 amino acids; AD, Alzheimer’s disease; CSF, cerebrospinal fluid; IWG-2, International Working Group; NIA-AA, National Institute on Aging / Alzheimer’s Association; P-tau181, tau phosphorylated at threonine 181; T-tau, total tau protein.

**Supplementary Table 2** Clinical and CSF biomarker-based diagnoses versus categorical neuropathological diagnoses of the cohort.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Diagnosis (n)** | **Definite AD (n)** | **Definite non-AD (n)** | **Definite non-AD with AD co-pathology (n)** | | **Correct diagnosis (%)** |
| **Clinical diagnoses** | Probable AD (26) | 24 | 1 | 1 | | 96 |
| Possible AD (2) | 1 | 1 | 0 | | 50 |
| Probable non-AD (15) | 4 | 10 | 1 | | 71 |
| Possible non-AD (2) | 2 | 0 | 0 | | 0 |
| Probable AD/Probable non-AD (5) | 2 | 2 | 1 | | NA |
| Probable AD/Possible non-AD (15) | 7 | 6 | 2 | | 53 |
| Probable non-AD/Possible AD (3) | 0 | 2 | 1 | | 100 |
| Possible AD/Possible non-AD (1) | 1 | 0 | 0 | | NA |
| Probable non-AD/Probable non-AD (1) | 1 | 0 | 0 | | 0 |
| Probable non-AD/Possible non-AD (1) | 0 | 0 | 1 | | 100 |
|  |  |  |  |  | |  |
|  |  | Sensitivity = 82 Specificity = 60 | Positive predicted value = 80  Negative predicted value = 63 | | | | |
|  |  |  |  |  | |  |
| **Biomarker diagnoses based on IWG-2** | Suggestive for AD (56 [20]) | 36 [9] | 13 [7] | 7 [4] | | 76 [65] |
| Not suggestive for AD (15 [4]) | 6 [1] | 9 [3] | 0 [0] | | 60 [75] |
|  |  | Sensitivity = 88 Specificity = 68 | Positive predicted value = 76  Negative predicted value = 68 | | | | |
|  |  |  |  |  | |  |
| **Biomarker diagnoses based on NIA-AA** | High likelihood of AD (56 [20]) | 36 [9] | 13 [7] | 7 [4] | | 76 [65] |
| Intermediate likelihood of AD (14 [3]) | 6 [1] | 8 [2] | 0 [0] | | NA |
| Low likelihood of AD (1 [1]) | 0 [0] | 1 [1] | 0 [0] | | 100 [100] |
|  |  |  |  |  | | |
|  |  | Sensitivity = 100 Specificity = 7 | Positive predicted value = 76  Negative predicted value = 100 | | | | |
|  |  |  |  |  |  | | | |

Data are number of patients (n), correct number of diagnoses (%), and number or percentages of ambiguous cases [n or %]. Sensitivity, specificity, and positive/negative predicted values were calculated and were reported (%). By calculating the sensitivity, specificity, and positive/negative predicted values for clinical diagnosis the non-AD patient with AD co-pathology were not included.

AD, Alzheimer’s disease; CSF, cerebrospinal fluid; IWG-2, International Working Group; NA, not applicable; NIA-AA, National Institute on Aging / Alzheimer’s Association; non-AD, other type of dementia (than Alzheimer’s disease).