**SUPPLEMENTAL INFORMATION**

**Supplemental figures**

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**Figure. 1** Imaging flow cytometry of intracellular Aβ1-42 uptake by monocyte subsets. **a-c** Monocytes were stained with APC-conjugated anti-CD14 mAb (red) and PE-conjugated anti-CD16 mAb (yellow), and FITC-conjugated Aβ1-42 is shown in green. Images of FITC-labelled Aβ1-42 intracellular uptake by the classical CD14+CD16- monocyte subset, intermediate CD14+CD16+ monocyte subset and the non-classical CD14dimCD16+ monocyte subset were collected.

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**Figure. 2** Association of Aβ1-42 uptake by monocytes with plasma Aβ1-42/Aβ1-40 level. **a-d** Correlations between plasma Aβ1-42/ Aβ1-40 and uptake of Aβ1-42 by all monocytes, by the CD14+CD16- subset, by the CD14+CD16+ subset, and by the CD14dimCD16+ subset. *MONO* monocytes, *Aβ* amyloid β-protein.

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**Figure. 3** Association of Aβ1-42 uptake by monocytes with CSF Aβ1-42 level. **a-d** Correlations between CSF Aβ1-42 leveland uptake of Aβ1-42 by all monocytes, by the CD14+CD16- subset, by the CD14+CD16+ subset, and by the CD14dimCD16+ subset. *MONO* monocytes, *CSF* cerebrospinal fluid, *Aβ* amyloid β-protein.

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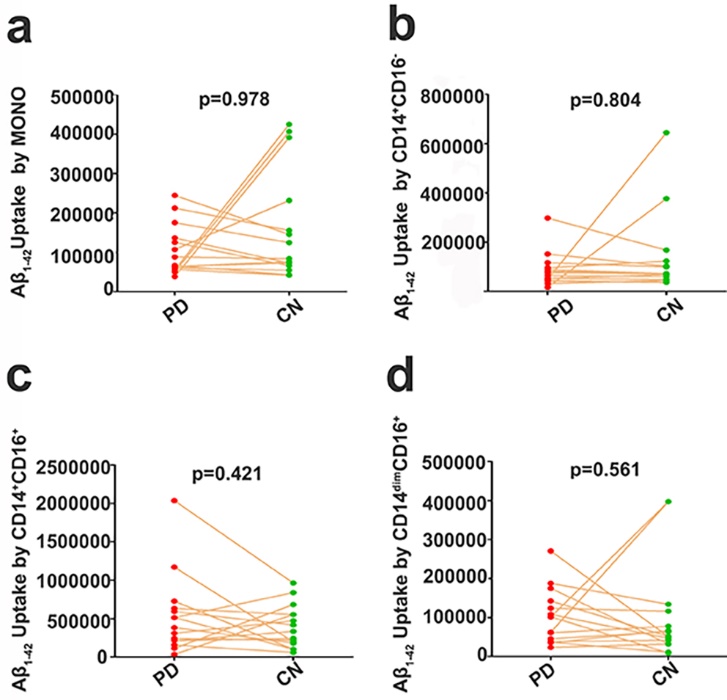
**Figure. 4** Association of Aβ1-42 uptake by monocytes with CSF Aβ1-40 levels. **a-d** Correlations between CSF Aβ1-40 and uptake of Aβ1-42 by all monocytes, by the CD14+CD16- subset, by the CD14+CD16+ subset, and by the CD14dimCD16+ subset. *MONO* monocytes, *CSF* cerebrospinal fluid, *Aβ* amyloid β-protein.

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**Figure. 5** Association of Aβ1-42 uptake by monocytes with CSF Aβ1-42/Aβ1-40 level. **a-d** Correlations between CSF Aβ1-42/ Aβ1-40 and uptake of Aβ1-42 by all monocytes, by the CD14+CD16- subset, by the CD14+CD16+ subset, and by the CD14dimCD16+ subset. *MONO* monocytes, *CSF* cerebrospinal fluid, *Aβ* amyloid β-protein.

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**Figure. 6** Association of Aβ1-42, Aβ1-40, Aβ1-42/ Aβ1-40 and T-tau/ Aβ1-42 levels in the plasma with those in the CSF. **a-d** Correlations between CSF Aβ1-42 and plasma Aβ1-42, CSF Aβ1-40 and plasma Aβ1-40, CSF Aβ1-42/ Aβ1-40 and plasma Aβ1-42/ Aβ1-40, CSF T-tau/Aβ1-42 and plasma T-tau/Aβ1-42. *MONO* monocytes, *CSF* cerebrospinal fluid, *Aβ* amyloid β-protein, *T-tau* total tau.

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**Figure. 7** **Comparison of Aβ1-42 uptake by monocyte subsets between PD patients and CN subjects**. **a-d** There were no significant differences between PD patients (n=15) and the age- and sex-matched CN controls (n=15) in Aβ1-42 uptake by total monocytes, the CD14+CD16- subset, the CD14+CD16+ subset and the CD14dimCD16- subset. *PD* Parkinson’s disease, *CN* cognitively normal control, *MONO* monocytes, *Aβ* amyloid-β protein.

**Table. 1** Characteristics of cognitively normal subjects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Age range** | **<= 30 years**  **(n=10)** | **31-45 years**  **(n=25)** | **46-60 years**  **(n=25)** | **61-75 years**  **(n=32)** | **> 75 year**  **(n=12)** | **P value** |
| **Age, y [mean (SD)]** | 25.0 (2.9) | 39.8 (4.0) | 57.2 (3.0) | 69.6 (4.0) | 83.0 (5.0) | <0.0001 |
| **Female, n(%)** | 5 (50.0) | 13 (52.0) | 12 (48.0) | 15 (46.9) | 5 (41.7) | 0.98 |
| **Comorbidities** |  |  |  |  |  |  |
| **Hypertension, n (%)** | 0 (0.0) | 2 (8.0) | 2 (8.0) | 4 (12.5) | 2 (16.7) | 0.70 |
| **Diabetes mellitus, n (%)** | 0 (0.0) | 1 (4.0) | 1 (4.0) | 2 (6.3) | 1 (8.3) | 0.90 |
| **Hyperlipidemia, n (%)** | 1 (10.0) | 2 (8.0) | 2 (8.0) | 2 (6.25) | 1 (8.3) | 1.00 |

Data are expressed as the means (standard deviation) P value, two-independent test, Mann–Whitney U test or chi-squared test as appropriate. *AD* Alzheimer’s disease,

*CN* cognitively normal control, *SD* standard deviation.

**Table. 2** Demographic data of AD patients and age- and sex-matched CN controls

|  |  |  |  |
| --- | --- | --- | --- |
|  | **AD**  **(n=22)** | **CN**  **(n=22)** | **P value** |
| **Age, y [mean (SD)]** | 69.5 (8.8) | 69.5 (8.8) | >0.9999 |
| **Male, n (%)** | 10 (45.5) | 10 (45.5) | 1.00 |
| **Years of education, mean (SD)** | 9.36 (3.5) | 9.41 (2.5) | 0.96 |
| ***APOE* ε4 carriers, n (%)** | 7 (31.8) | 2 (9.1) | 0.14 |
| **MMSE, mean (SD)** | 10.2 (8.2) | 28.0 (1.1) | <0.0001 |
| **CDR, mean (SD)** | 2.0 (0.9) | 0.0 | <0.0001 |
| **ADL, mean (SD)** | 45.3 (18.1) | 20.8 (1.1) | <0.0001 |
| **Comorbidities** |  |  |  |
| **Hypertension, n (%)** | 6 (27.3) | 3 (13.6) | 0.46 |
| **Diabetes mellitus, n (%)** | 1 (4.5) | 3 (13.6) | 0.60 |
| **Hyperlipidemia, n (%)** | 2 (9.1) | 1 (4.5) | 1.00 |
| **Medication, n (%)** |  |  |  |
| **Hypertension** | 5 (22.7) | 2 (9.1) | 0.41 |
| **Diabetes mellitus** | 1 (4.5) | 3 (13.6) | 0.60 |
| **Hyperlipidemia** | 1 (4.5) | 1 (4.5) | 1.00 |

Data are expressed as the means (standard deviation) P value, two-independent test, Mann–Whitney U test or chi-squared test as appropriate.

*AD* Alzheimer’s disease, *CN* cognitively normal control, *SD* standard deviation, *MMSE* Mental State Examination, *ADL* Activities of Daily Living, *CDR* Clinical Dementia Rating.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PD**  **(n= 20)** | **CN**  **(n= 20)** | **P values** |
| **Age, y [mean (SD)]** | 65.8 (10.8) | 67.3 (10.0) | 0.70 |
| **Male, n (%)** | 8 (53.3) | 8 (53.3) | 1.00 |
| **Years of education, mean (SD)** | 9.2 (2.1) | 9.1 (2.7) | 0.88 |
| ***APOE* ε4 carriers, n (%)** | 2 (13.3) | 1 (6.7) | 1.00 |
| **Comorbidities** |  |  |  |
| **Hypertension, n (%)** | 0 (0.0) | 1 (6.7) | 1.00 |
| **Diabetes mellitus, n (%)** | 0 (0.0) | 1 (6.7) | 1.00 |
| **Hyperlipidemia, n (%)** | 1 (6.7) | 0 (0.0) | 1.00 |
| **Medication, n (%)** |  |  |  |
| **Hypertension** | 0 (0.0) | 1 (5.0) | 1.00 |
| **Diabetes mellitus** | 0 (0.0) | 1 (5.0) | 1.00 |
| **Hyperlipidemia** | 0 (0.0) | 0 (0.0) | / |

**Table. 3** Demographic data of PD patients and age- and sex-matched CN controls

Data are expressed as the means (standard deviation) P value, two-independent test, Mann–Whitney U test or chi-squared test as appropriate.

*AD* Parkinson’s disease, *CN* cognitively normal control, *SD* standard deviation.