**SUPPLEMENTARY MATERIALS**

Supplementary table 1. Association between baseline cynical hostility and mortality during the 10-year follow-up.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Level of cynical hostility** | **Number of deaths** | ***P* value** | **Hazard Ratio\*** | **95% CI** |
|  None (score=0) (reference) | 27 |  | 1.00 |  |
|  Intermediate (score=1) | 52 | .660 | 1.16 | 0.68,1.81 |
|  High (score=2-3) | 75 | .998 | 0.99 | 0.62,1.58 |

\*Hazard Ratios were calculated using the Cox proportional hazard models with delayed entry, age as time-scale, after adjustment for sex, educational level, baseline Mini Mental State Examination score, APOE ε4, history of cardiovascular disease, diabetes, hypertension, body mass index, hypercholesterolemia, smoking status, alcohol use, depressive symptomatology, and lifetime anxiety.

The vital status of each participant during the 10‐year follow‐up was determined based on death certificates, medical records and reports from the participant's family and physician. The date of death was defined as the date of event.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Brain structure** | **Region of interest (mm3)** | **Cerebral hemisphere** | **Cynical Hostility** | **Model****1** | **Model****2** | **Model****3** | **Model****4** |
| **None****(score=0)** |  | **Moderate****(score=1)** |  | **High****(score=2-3)** |
| **Mean** | **SD** |  | **Mean** | **SD** |  | **Mean** | **SD** | ***P* value**† | ***P* value**† | ***P* value**† | ***P* value**† |
|  Grey matter | Precuneus | Left | 7656.23 | 968.01 |  | 7717.81 | 970.86 |  | 7655.61 | 1028.67 | 0.917 | 0.994 | 0.995 | 0.992 |
|  | Right | 7554.04 | 971.39 |  | 7807.48 | 1001.66 |  | 7647.49 | 948.90 | 0.199 | 0.369 | 0.464 | 0.368 |
| Entorhinal  | Left | 1877.08 | 533.64 |  | 1989.40 | 508.28 |  | 1944.35 | 486.06 | 0.270 | 0.209 | 0.255 | 0.207 |
|  | Right | 1849.48 | 364.53 |  | 1899.48 | 400.51 |  | 1878.13 | 391.35 | 0.728 | 0.577 | 0.317 | 0.572 |
| Frontal lobe | Left | 69515.17 | 6961.77 |  | 70148.68 | 7229.14 |  | 69026.80 | 6705.46 | 0.715 | 0.645 | 0.733 | 0.647 |
|  | Right | 69366.64 | 7222.43 |  | 70217.51 | 7070.27 |  | 68959.65 | 6575.83 | 0.562 | 0.522 | 0.657 | 0.526 |
| ACC | Left | 3309.72 | 669.52 |  | 3314.45 | 683.78 |  | 3301.34 | 608.16 | 0.828 | 0.951 | 0.974 | 0.950 |
|  |  | Right | 2802.49 | 882.08 |  | 2715.47 | 960.10 |  | 2785.02 | 821.87 | 0.373 | 0.487 | 0.508 | 0.502 |
|  | Hippocampus | Left | 3234.92 | 324.30 |  | 3177.54 | 366.53 |  | 3166.96 | 338.38 | 0.576 | 0.649 | 0.726 | 0.659 |
|  |  | Right | 3214.18 | 340.20 |  | 3189.08 | 345.23 |  | 3138.44 | 360.08 | 0.353 | 0.347 | 0.339 | 0.333 |
|  White matter | WML (log) |  | 0.20 | 0.36 |  | 0.22 | 0.34 |  | 0.30 | 0.44 | 0.034 | 0.021 | 0.019 | 0.023 |
| Corpus callosum |  |  |  |  |  |  |  |  |  |  |  |  |
|  Anterior |  | 820.73 | 159.61 |  | 800.18 | 159.10 |  | 766.21 | 150.88 | 0.008 | 0.008 | 0.032 | 0.006 |
|  Mid anterior |  | 385.27 | 85.72 |  | 381.51 | 88.35 |  | 369.31 | 97.30 | 0.246 | 0.232 | 0.278 | 0.205 |
|  Central |  | 362.47 | 62.34 |  | 352.23 | 69.78 |  | 350.38 | 69.87 | 0.464 | 0.437 | 0.721 | 0.414 |
|  Mid posterior |  | 338.30  | 72.61 |  | 331.60 | 71.42 |  | 330.10 | 72.99 | 0.782 | 0.789 | 0.935 | 0.663 |
|  Posterior |  | 871.86 | 141.37 |  | 830.42 | 162.54 |  | 837.49 | 148.05 | 0.137 | 0.134 | 0.146 | 0.137 |

Supplementary table 2. Association between Cynical Hostility levels and MRI volumes of brain regions of interest (ANOVA).

† False Discovery Rate (FDR) corrected the significance level for white matter regions of interest: q\*= 0.0083 (Benjamini and Hochberg, 1995)

Model 1: Analyses were performed after adjustment for age, sex, educational level, and intracranial volume.

Model 2: Model 1 + depression

Model 3: Model 1 + lifetime anxiety

Model 4: Mode 1 + suicidal risk

ACC = Anterior Cingulate Cortex ; WML = White Matter Lesions