|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No (N=4758) *a*  Mean (SD); Median | Yes (N=924)  Mean (SD); Median | Total (N=5707)  Mean (SD); Median | *P-value b* |
| Age, at baseline | 72.9 (10.1); 73.9 | 74.4 (9.7); 75.7 | 73.2 (10.0); 74.2 | 0.001 |
| Sex, male | 2406 (50.6%) | 483 (52.3%) | 2895 (50%) | 0.343 |
| Education, years | 14.4 (2.8); 12.0 | 14.0 (2.8); 14.0 | 14.3 (2.8); 14.0 | 0.001 |
| Race, white | 4635 (98.2%) | 896 (97.7%) | 5096 (89%) | 0.366 |
| Ethnicity, Not Hispanic | 4686 (99.7%) | 903 (99.3%) | 5156 (90%) | 0.094 |
| Charlson comorbidity index | 3.0 (3.0); 2.0 | 3.7 (3.3); 3.0 | 3.1 (3.1); 2.0 | 0.001 |
| APOE ε4 positive | 1181 (27.1%) | 256 (29.5%) | 1441 (25%) | 0.146 |
| Lipid test (HDL) | 45.7 (13.9) | 45.1 (14.9) | 39 (22) | 0.233 |
| Balance difficulties | 721 (15.5%) | 249 (27.4%) | 764 (13%) | 0.001 |
| Hearing Loss at baseline | 1494 (31%) | 367 (39%) | 1868 (32%) | 0.001 |
| Gait speed < 0.6m/sec b | 144 (30%) | 42 (4.5) | 187 (3.2) | 0.012 |
| Beck Depression Inventory | 4.4 (4.5); 3.0 | 8.1 (6.4); 7.0 | 4.9 (5.0); 4.0 | 0.001 |
| Beck Anxiety Inventory | 2.0 (2.9); 1.0 | 8.0 (6.5); 6.0 | 2.9 (4.3); 1.0 | 0.001 |
| Global cognitive z-score c | -0.2 (1.2); -0.2 | -0.6 (1.2); -0.6 | -0.4 (1.2); -0.3 | 0.001 |
| Memory z-score c | -0.4 (1.2); -0.3 | -0.6 (1.2); -0.6 | -0.4 (1.2); -0.4 | 0.001 |
| Language z-score c | -0.3 (1.2); -0.2 | -0.5 (1.3); -0.4 | -0.3 (1.2); -0.2 | 0.001 |
| Attention/executive z-score c | -0.3 (1.2); -0.1 | -0.7 (1.4); -0.5 | -0.3 (1.1); -0.2 | 0.001 |
| Visuospatial skills z-score c | -0.2 (1.1); -0.1 | -0.4 (1.1); -0.3 | -0.2 (1.1); -0.3 | 0.001 |
| Amyloid-β deposition | 1.5 (0.3); 1.4 | 1.5 (0.3); 1.4 | 1.4 (0.2); 1.4 | 0.159 |
| AD signature thickness, mm | 2.7 (0.2); 2.7 | 2.7 (0.2); 2.7 | 2.6 (0.1); 2.7 | 0.077 |

**Table 1.** Participants’ characteristics by significant persistent dizziness/lightheadedness at baseline **Note:** data presented as N (%) for categorical and mean (SD); median for continuous characteristics. a 25 missing. b 465 missing data. c Global cognitive z-score was computed after scaling raw cognitive test scores (mean 0 ± 1) using data for cognitively unimpaired participants at baseline. Domain-specific z-scores were summed and scaled to obtain global z-scores.

**Table 2.** Factors contributing to persistent dizziness/lightheadedness in older adults.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | # Of patients | HR | 95% CI | *P-value* |
| Age at visit | 4783 | 1.02 | 1.01-1.03 | 0.001 |
| Sex, male | 4783 | 1.13 | 1.01-1.28 | 0.032 |
| Education, years | 4778 | 0.95 | 0.93-0.97 | 0.001 |
| Race, white | 4745 | 0.89 | 0.57-1.41 | 0.640 |
| Ethnicity, Not Hispanic | 4723 | 1.11 | 0.35-3.45 | 0.852 |
| Charlson comorbidity index | 4782 | 1.07 | 1.05-1.09 | 0.001 |
| APOE ε4 positive | 4381 | 1.095 | 0.95-1.25 | 0.640 |
| Lipid test (HDL) | 1543 | 0.99 | 0.98-0.99 | 0.008 |
| Balance difficulties | 4654 | 1.07 | 1.06-1.08 | 0.001 |
| Gait speed < 0.6m/sec | 4410 | 1.30 | 0.93-1.83 | 0.130 |
| Beck Depression Scale (BDS) | 4684 | 1.07 | 1.06-1.08 | 0.001 |
| Beck Anxiety Inventory (BAI) | 4758 | 1.08 | 1.07-.10 | 0.001 |
| Global cognitive z-score | 4426 | 0.83 | 0.79-0.88 | 0.001 |
| Memory z-score | 4702 | 0.85 | 0.80-0.89 | 0.001 |
| Language z-score | 4600 | 0.86 | 0.82-0.91 | 0.001 |
| Attention/executive z-score | 4553 | 0.84 | 0.79-0.88 | 0.001 |
| Visuospatial skills z-score | 4552 | 0.89 | 0.85-0.95 | 0.003 |
| Amyloid-β deposition | 744 | 2.23 | 1.45-3.44 | 0.002 |
| AD signature thickness, mm | 1548 | 0.38 | 0.19-0.74 | 0.004 |

**Table 3.** AD markers by follow-up events as compared to baseline. For simplification, the 14 years were divided into five events (1 year +/- 6months; 3 years; 5 years; 7 years; and 10 +/- 2 years)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variables | Baseline  Mean (SD)  Median | 1 year  Mean (SD)  Median | 3 years  Mean (SD)  Median | 5 years  Mean (SD)  Median | 7 years  Mean (SD)  Median | 10 years  Mean (SD)  Median |
| Beck Depression Inventory | (N=5590)  5.0 (5.1)  4.0 | (N=3919)  4.7 (4.9) \*\*  3.0 | (N=3569)  4.6 (4.7)  3.0 | (N=2702)  4.8 (4.7) \*\*  4.0 | (N=1731)  5.0 (4.9) \*\*  4.0 | (N=783)  5.6 (5.2) \*\*  4.0 |
| Beck Anxiety Inventory | (N=5682)  2.9 (4.4)  1,0 | (N=3938)  2.7 (4.0) \*\*  1.0 | (N=3583)  2.7 (4.1) \*\*  1.0 | (N=2715)  2.7 (4.2)  1.0 | (N=1753)  2.8 (4.3)  1.0 | (N=796)  3.0 (4.7) \*\*  1.0 |
| Global cognitive z-score | (N=5280)  -0.4 (1.2)  -0.3 | (N=3650)  -0.2 (1.3) \*\*  -0.03 | (N=3274)  -0.2 (1.3) \*\*  0 | (N=2439)  -0.1 (1.3) \*\*  0.1 | (N=1559)  -0.2 (1.2) \*\*  0 | (N=64)  -0.6 (1.2) \*\*  -0.4 |
| Memory z-score | (N=5609)  -0.4 (1.2)  -0.4 | (N=3884)  -0.1 (1.2) \*\*  -0.01 | (N=3530)  -0.1 (1.3) \*\*  0.1 | (N=2651)   1. (1.3) \*\*   0.2 | (N=1709)  0.0 (1.3) \*\*  0.2 | (N=768)  -0.3 (1.3)  -0.2 |
| Language z-score | (N=5488)  -0.4 (1.3)  -0.2 | (N=3801)  -0.2 (1.2)  -0.1 | (N=3432)  -0.2 (1.3) \*\*  -0.01 | (N=2586)  -0.2 (1.3) \*\*  -0.1 | (N=1674)  -0.3 (1.2) \*\*  -0.1 | (N=752)  -0.7 (1.3) \*\*  -0.4 |
| Attention/executive z-score | (N=5437)  -0.4 (1.3)  -0.2 | (N=3745)  -0.3 (1.3) \*\*  -0.01 | (N=3379)  -0.3 (1.3) \*\*  -0.1 | (N=2522)  -0.3 (1.3) \*\*  -0.1 | (N=1620)  -0.4 (1.3) \*\*  -0.3 | (N=706)0.9 (1.2) \*\*  -0.6 |
| Visuospatial skills z-score | (N=5426)  -0.3 (1.1)  -0.2 | (N=3752)  -0.1 (1.1) \*\*  0 | (N=3362)  -0.1 (1.1) \*\*  -0.1 | (N=2511)  0.0 (1.1)  0.1 | (N=1604)  -0.0 (1.1)  0.1 | (N=706)  -0.3 (1.0) \*\*  -0.2 |
| Amyloid-β deposition | (N=866)  1.5 (0.3)  1.4 | (N=459)  1.5 (0.3) \*\*  1.4 | (N=538)  1.6 (0.4) \*\*  1.4 | (N=359)  1.7 (0.4) \*\*  1.5 | (N=140)  1.8 (0.5) \*\*  1.7 | (N=78)  1.9 (0.5) a  1.7 |
| AD signature thickness, mm | (N=1831)  2.7 (0.2)  2.7 | (N=1152)  2.6 (0.2) \*\*  2.6 | (N=1216)  2.6 (0.2) \*\*  2.6 | (N=511)  2.6 (0.2) \*\*  2.6 | (N=511)  2.6 (0.2) \*\*  2.6 | (N=78)  2.5 (0.2) \*\*  2.6 |

**Table 4.** Hazard risk (HR) of association between persistent dizziness/lightheadedness and AD markers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | # Of patients | HR | 95% CI | *P-value* |
| Beck Depression Scale | 4680 | 1.07 | 1.05-1.08 | 0.001 |
| Beck Anxiety Inventory | 4753 | 1.08 | 1.06-.10 | 0.001 |
| Global cognitive z-score | 4425 | 0.94 | 0.88-1.01 | 0.108 |
| Memory z-score | 4701 | 0.94 | 0.88-1.01 | 0.106 |
| Language z-score | 4599 | 0.95 | 0.91-1.01 | 0.170 |
| Attention/executive z-score | 4552 | 0.95 | 0.89-1.01 | 0.147 |
| Visuospatial skills z-score | 4551 | 1.00 | 0.93-1.06 | 0.991 |
| Amyloid-β deposition | 743 | 1.87 | 1.16-3.02 | 0.009 |
| AD signature thickness, mm | 1547 | 1.20 | 0.54-2.68 | 0.650 |