**Supplementary Table 1**. Raw and Z score ranges for each cognitive test, and percentage of patients scoring in the impaired range in each test

|  |  |  |  |
| --- | --- | --- | --- |
| **Cognitive test** | **Raw score range** | **Z score range** | **Percentage scoring 2SD below norm** |
| MMSE | 24–30 | –5.6–1.2 | 11.9% |
| Forward Digit Span | 5–16 | –2.06–4.06 | 2.0% |
| Backward Digit Span | 0–13 | –3.24–2.95 | 3.0% |
| BNT | 12–60 | –10.4–1.46 | 30.7% |
| RAVLT Any |  |  | 14.9% |
| RAVLT Total Recall | 23–67 | –4.9–1.84 | 5.9% |
| RAVLT Retention | 1–15 | –5.8–1.7 | 7.9% |
| RAVLT Delayed Recall | 0–15 | –4.2–1.8 | 6.9% |
| RAVLT Recognition | 9–15 | –2.8–1.56 | 2.0% |
| Clock drawing | 3–10 | –5–1 | 5.0% |
| Trail Making Test A | 14–85 | –5.6–1.49 | 7.9% |
| Trail Making Test B | 29–190 | –10.22–1.75 | 26.7% |
| COWA | 11–70 | –3.14–2.63 | 5.9% |
| Category Fluency — Animals | 8–43 | –2.57–3.91 | 4.0% |

MMSE — mini mental status exam; BNT — Boston naming test; RAVLT — Rey auditory verbal learning test; COWA — controlled oral word association task

**Supplementary Table 2.** Correlation between Trail Making Test scores, headache, and visual function

|  |  |  |  |
| --- | --- | --- | --- |
| **Measure 1** | **Measure 2** | **Spearman’s rho** | **p-value** |
| Trails A2 z-score | Headache intensity, NRS | –0.197 | 0.053 |
| Trails B2 z-score | Headache intensity, NRS | –0.443 | < 0.0001 |
| Trails A2 z-score | VA | –0.262 | 0.008 |
| Trails B2 z-score | VA | –0.249 | 0.013 |
| Trails A2 z-score | CV | 0.198 | 0.047 |
| Trails B2 z-score | CV | 0.170 | 0.093 |
| Trails A2 z-score | PA | –0.040 | 0.695 |
| Trails B2 z-score | PA | 0.147 | 0.146 |

NRS — numerical rating scale; VA — mean visual acuity; CV — mean color vision; PA — mean papilledema grade

**Supplementary Table 3.** Correlation between subjective total, retrospective, and prospective memory scores and RAVLT results

|  |  |  |  |
| --- | --- | --- | --- |
| Measure 1 | Measure 2 | Spearman’s rho | p-value |
| PRMQ Total | RAVLT Total Recall | –0.279 | 0.007 |
| PRMQ Total | RAVLT Retention | –0.196 | 0.065 |
| PRMQ Total | RAVLT Delayed Recall | –0.233 | 0.024 |
| PRMQ Total | RAVLT Recognition | –0.053 | 0.621 |
| PRMQ Retro | RAVLT Total Recall | –0.283 | 0.006 |
| PRMQ Retro | RAVLT Retention | –0.207 | 0.051 |
| PRMQ Retro | RAVLT Delayed Recall | –0.200 | 0.055 |
| PRMQ Retro | RAVLT Recognition | –0.054 | 0.614 |
| PRMQ Pro | RAVLT Total Recall | –0.247 | 0.017 |
| PRMQ Pro | RAVLT Retention | –0.179 | 0.091 |
| PRMQ Pro | RAVLT Delayed Recall | –0.247 | 0.017 |
| PRMQ Pro | RAVLT Recognition | –0.049 | 0.647 |

RAVLT — Rey Auditory Verbal Learning Test; PRMQ — Prospective and retrospective memory questionnaire