**Supplementary Information**

**Associations between cognitive impairment and P300 mean amplitudes in individuals with bipolar disorder in remission**

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**Supplementary Tables**

**Supplementary Table S1.** **Correlations between COBRA total score and neuropsychological tests**

|  |  |  |
| --- | --- | --- |
|  | *rho* | *P* value |
| WCSTCA | −0.073 | 0.684 |
| WCSTPEM | 0.170 | 0.343 |
| CPTerr | 0.130 | 0.471 |
| CPTRT | −0.132 | 0.463 |
| WFT | −0.086 | 0.633 |
| STRT | 0.094 | 0.603 |
| STerr | −0.185 | 0.302 |
| TMTA | 0.160 | 0.375 |
| TMTB | −0.049 | 0.787 |
| AVLTi | 0.137 | 0.446 |
| AVLTr | 0.108 | 0.549 |

Abbreviations: COBRA, Cognitive Complaints in Bipolar Disorder Rating Assessment; WCST, Wisconsin Card Sorting Test (CA, categories achieved; PEM, perseverative errors Milner type); CPT, Continuous Performance Test (err, number of errors; RT, reaction time); WFT, Word Fluency Test; ST, Stroop test (RT, err); TMTA, Trail Making Test numeric sequence; TMTB, Trail Making Test alternating numeric and alphabetic sequence; AVLT, Auditory Verbal Learning Test (i, immediate recall; r, recent recall)

**Supplementary Table S2.** **Correlations between COBRA total score and P300 mean amplitudes**

|  |  |  |
| --- | --- | --- |
|  | *rho* | *P* value |
| Fz2tP3b  | −0.192 | 0.285 |
| Cz2tP3b | −0.176 | 0.326 |
| Pz2tP3b | −0.127 | 0.481 |
| Fz3tP3a | 0.245 | 0.17 |
| Cz3tP3a | 0.29 | 0.101 |
| Pz3tP3a | 0.209 | 0.244 |
| Fz3tP3b | −0.047 | 0.795 |
| Cz3tP3b | −0.014 | 0.938 |
| Pz3tP3b | −0.078 | 0.667 |

Abbreviations: COBRA, Cognitive Complaints in Bipolar Disorder Rating Assessment; Fz, frontal; Cz, central; Pz, parietal; 2t, two-stimulus oddball task; 3t, three-stimulus oddball task; P3a, P300 earlier peak; P3b, P300 later peak

**Supplementary Table S3.** **Correlations between P300 mean amplitudes and neuropsychological tests**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fz2tP3b | Cz2tP3b | Pz2tP3b | Fz3tP3a | Cz3tP3a | Pz3tP3a | Fz3tP3b | Cz3tP3b | Pz3tP3b |
| WCSTCA *rho* | .072 | 0.118 | 0.104 | −0.093 | −0.056 | 0.024 | −0.011 | −0.015 | 0.019 |
|  *p* | 0.691 | 0.512 | 0.565 | 0.606 | 0.758 | 0.893 | 0.951 | 0.934 | 0.918 |
| WCSTPEM  *rho* | −0.147 | −0.088 | −0.047 | −0.015 | −0.011 | −0.058 | −0.026 | 0.08 | −0.06 |
|  *p* | 0.414 | 0.626 | 0.794 | 0.934 | 0.95 | 0.75 | 0.886 | 0.657 | 0.738 |
| CPTerr *rho* | −0.162 | −0.168 | −0.174 | 0.132 | −0.014 | −0.19 | −0.047 | −0.098 | −0.151 |
|  *p* | 0.369 | 0.349 | 0.333 | 0.464 | 0.939 | 0.289 | 0.796 | 0.586 | 0.402 |
| CPTRT *rho* | 0.132 | 0.073 | −0.021 | −0.079 | −0.146 | −0.106 | 0.268 | 0.289 | 0.039 |
|  *p* | 0.464 | 0.687 | 0.91 | 0.663 | 0.417 | 0.556 | 0.131 | 0.102 | 0.831 |
| WFT *rho* | 0.171 | 0.166 | 0.273 | 0.232 | 0.131 | 0.28 | −0.027 | −0.034 | 0.284 |
|  *p* | 0.341 | 0.357 | 0.125 | 0.194 | 0.467 | 0.114 | 0.88 | 0.85 | 0.109 |
| STRT *rho* | 0.146 | 0.119 | .027 | −0.061 | 0.074 | −0.241 | 0.259 | 0.197 | −0.037 |
|  *p* | 0.417 | 0.508 | 0.882 | 0.734 | 0.683 | 0.177 | 0.145 | 0.271 | 0.836 |
| STerr *rho* | 0.308 | 0.445\*\* | 0.299 | 0.18 | 0.234 | −0.022 | 0.355\* | 0.421\* | 0.327 |
|  *p* | 0.081 | 0.009 | 0.091 | 0.316 | 0.19 | 0.902 | 0.043 | 0.015 | 0.063 |
| TMTA *rho* | −0.163 | −0.121 | −0.166 | −0.065 | −0.112 | −0.278 | −0.01 | 0.065 | −0.193 |
|  *p* | 0.366 | 0.502 | 0.356 | 0.719 | 0.535 | 0.118 | 0.957 | 0.72 | 0.283 |
| TMTB *rho* | 0.031 | 0.105 | −0.041 | 0.092 | 0.096 | −0.141 | 0.189 | 0.264 | −0.018 |
|  *p* | 0.864 | 0.561 | 0.82 | 0.61 | 0.595 | 0.435 | 0.291 | 0.138 | 0.922 |
| AVLTi *rho* | 0.067 | 0.067 | 0.134 | 0.168 | 0.156 | 0.23 | 0.041 | 0.05 | 0.153 |
|  *p* | 0.713 | 0.713 | 0.458 | 0.349 | 0.387 | 0.198 | 0.822 | 0.781 | 0.395 |
| AVLTr *rho* | 0.042 | 0.193 | 0.359\* | 0.157 | 0.19 | 0.369\* | 0.097 | 0.13 | 0.319 |
|  *p* | 0.817 | 0.282 | 0.04 | 0.383 | 0.289 | 0.035 | 0.593 | 0.472 | 0.07 |

Abbreviations: WCST, Wisconsin Card Sorting Test (CA, categories achieved; PEM, perseverative errors Milner type); CPT, Continuous Performance Test (err, number of errors; RT, reaction time); WFT, Word Fluency Test; ST, Stroop test (RT, err); TMTA, Trail Making Test numeric sequence; TMTB, Trail Making Test alternating numeric and alphabetic sequence; AVLT, Auditory Verbal Learning Test (i, immediate recall; r, recent recall); Fz, frontal; Cz, central; Pz, parietal; 2t, two-stimulus oddball task; 3t, three-stimulus oddball task; P3a, P300 earlier peak; P3b, P300 later peak. \*\**p* < 0.01, \**p* < 0.05

**Supplementary Table S4.** **Correlations between COBRA total score and sociodemographic and clinical characteristics**

|  |  |  |
| --- | --- | --- |
|  | *rho* | *P* value |
| 17-HAM-D  | 0.268 | 0.131 |
| YMRS | 0.072 | 0.69 |
| IQ (JART-25) | −0.047 | 0.794 |
| Duration of illness | 0.068 | 0.705 |
| Age | −0.058 | 0.75 |
| Age at onset | −0.159 | 0.377 |
| Years of education | 0.164 | 0.361 |
| Depressive onset | −0.077 | 0.669 |
| Number of hospitalizations | −0.078 | 0.665 |
| Number of total episodes  | 0.091 | 0.616 |
| Number of hypomanic episodes | −0.074 | 0.684 |
| Number of manic episodes | −0.175 | 0.33 |
| Number of depressive episodes  | 0.24 | 0.178 |
| Number of mixed episodes  | 0.273 | 0.125 |
| Number of suicide attempts  | 0.118 | 0.513 |

Abbreviations: JART-25, Japanese Adult Reading Scale-25-word version; 17-HAM-D, Hamilton Rating Scale for Depression; YMRS, Young Mania Rating Scale