

**On-line Table 1: General characteristics of patients and controls**

| Group (No.)  | Age (mean, yr; range) | Sex (M/F) | Disease Duration (mean, yr) | UPDRS Score (mean) | MMSE Score (mean) |
|--------------|-----------------------|-----------|-----------------------------|--------------------|-------------------|
| Controls (7) | 60.4 ± 4.6 (55–66)    | 5:2       | N/A                         | N/A                | N/A               |
| PSP (9)      | 66.5 ± 7.2 (51–73)    | 4:5       | 3.8 ± 2.2                   | 43.5 ± 25.6        | 16.6 ± 5.7        |
| CBD (11)     | 66.4 ± 8.7 (51–77)    | 4:7       | 3 ± 1.1                     | 40.1 ± 12.3        | 21.3 ± 1.1        |

**Note:**—N/A indicates not applicable or not performed; UPDRS, Unified Parkinson's Disease Rating Scale; MMSE, Mini-Mental State Examination; PSP, progressive supranuclear palsy; CBD, corticobasal degeneration.

**On-line Table 2: ADC<sub>ave</sub> values for regions of interest identified in the white matter, basal ganglia, and thalamus**

|                        | Mean ADC Value (SD) |               |                | F Value (P value) | P Value PSP vs Controls | P Value CBD vs Controls | P Value PSP vs CBD |
|------------------------|---------------------|---------------|----------------|-------------------|-------------------------|-------------------------|--------------------|
|                        | Controls            | PSP           | CBD            |                   |                         |                         |                    |
| Caudate nucleus        | 0.699 (0.019)       | 0.802 (0.052) | 0.789 (0.069)  | 5.3 (.01)*        | .01*                    | .03*                    | .90                |
| Globus pallidus        | 0.693 (0.019)       | 0.818 (0.110) | 0.775 (0.09)   | 3.9 (.03)*        | .027*                   | .16                     | .53                |
| Putamen                | 0.707 (0.022)       | 0.741 (0.057) | 0.745 (0.088)  | 0.7 (.47)         | .58                     | .47                     | .99                |
| Anterior thalamus      | 0.728 (0.048)       | 0.829 (0.073) | 0.755 (0.042)  | 7.4 (.003)†       | .004†                   | .57                     | .02*               |
| Medial thalamus        | 0.796 (0.038)       | 0.863 (0.044) | 0.801 (0.065)  | 4.3 (.02)*        | .05*                    | .98                     | .04*               |
| Motor thalamus         | 0.706 (0.023)       | 0.765 (0.031) | 0.777 (0.049)§ | 7.7 (.003)†       | .01*                    | .002†                   | .77                |
| Posterior thalamus     | 0.707 (0.011)       | 0.765 (0.045) | 0.748 (0.062)  | 2.9 (.07)         | .07                     | .20                     | .74                |
| SCP                    | 0.788 (0.052)       | 0.864 (0.058) | 0.797 (0.060)  | 4.5 (.02)*        | .04*                    | .95                     | .04*               |
| Fronto-orbital region  | 0.698 (0.038)       | 0.735 (0.063) | 0.740 (0.038)  | 1.8 (.18)         | .29                     | .18                     | .96                |
| Inferior frontal gyrus | 0.754 (0.049)       | 0.772 (0.052) | 0.79 (0.066)   | 0.7 (.46)         | .82                     | .44                     | .78                |
| Anterior cingulum      | 0.680 (0.018)       | 0.743 (0.074) | 0.702 (0.031)  | 3.5 (.04)*        | .04*                    | .63                     | .16                |
| Posterior cingulum     | 0.699 (0.026)       | 0.753 (0.050) | 0.719 (0.034)  | 4.0 (.03)*        | .03*                    | .53                     | .15                |
| SMA                    | 0.698 (0.048)       | 0.767 (0.032) | 0.798 (0.069)  | 7.4 (.003)†       | .04*                    | .002†                   | .42                |
| Precentral gyrus       | 0.697 (0.027)       | 0.762 (0.055) | 0.838 (0.048)§ | 20.3 (.001)‡      | .03*                    | .001‡                   | .004†              |
| Postcentral gyrus      | 0.694 (0.046)       | 0.765 (0.065) | 0.850 (0.071)§ | 12.5 (.001)‡      | .10                     | .001‡                   | .02*               |

**Note:**—ADC<sub>ave</sub> indicates apparent diffusion coefficient values ( $\times 10^{-3}$  mm<sup>2</sup>/s); SCP, superior cerebellar peduncle; SMA, supplementary motor area.

\*  $P < .05$ .

†  $P < .01$ .

‡  $P < .001$ .

§ ADC in the most affected hemisphere (significantly higher than that in the contralateral one).

**On-line Table 3: FA for regions of interest identified in the white matter and thalamus**

|                        | Mean FA Value (SD) |               |                | F Value (P value) | P Value PSP vs Controls | P Value CBD vs Controls | P Value PSP vs CBD |
|------------------------|--------------------|---------------|----------------|-------------------|-------------------------|-------------------------|--------------------|
|                        | Controls           | PSP           | CBD            |                   |                         |                         |                    |
| Anterior thalamus      | 0.300 (0.061)      | 0.296 (0.050) | 0.295 (0.046)  | 0.02 (.98)        | .98                     | .09                     | .99                |
| Medial thalamus        | 0.272 (0.045)      | 0.268 (0.047) | 0.258 (0.038)  | 0.2 (.78)         | .97                     | .78                     | .98                |
| Motor thalamus         | 0.273 (0.053)      | 0.319 (0.029) | 0.314 (0.067)  | 1.7 (.19)         | .21                     | .27                     | .97                |
| Posterior thalamus     | 0.298 (0.077)      | 0.316 (0.087) | 0.362 (0.597)  | 1.8 (.18)         | .88                     | .20                     | .36                |
| SCP                    | 0.537 (0.075)      | 0.541 (0.063) | 0.526 (0.058)  | 0.1 (.86)         | .99                     | .94                     | .86                |
| Fronto-orbital region  | 0.432 (0.035)      | 0.364 (0.056) | 0.393 (0.023)  | 5.7 (.009)†       | .007†                   | .11                     | .28                |
| Inferior frontal gyrus | 0.282 (0.064)      | 0.262 (0.051) | 0.282 (0.053)  | 0.3 (.69)         | .77                     | .99                     | .71                |
| Anterior cingulum      | 0.474 (0.044)      | 0.340 (0.061) | 0.408 (0.040)  | 14.8 (.001)‡      | .001‡                   | .03*                    | .01*               |
| Posterior cingulum     | 0.504 (0.043)      | 0.418 (0.055) | 0.437 (0.059)  | 5.2 (.01)*        | .01*                    | .05*                    | .70                |
| SMA                    | 0.493 (0.092)      | 0.400 (0.070) | 0.370 (0.045)  | 7.1 (.004)†       | .03*                    | .003‡                   | .59                |
| Precentral gyrus       | 0.544 (0.042)      | 0.392 (0.041) | 0.371 (0.058)  | 29.03 (.001)‡     | .001‡                   | .001‡                   | .63                |
| Postcentral gyrus      | 0.523 (0.070)      | 0.401 (0.108) | 0.403 (0.082)§ | 4.7 (.02)*        | .03*                    | .03*                    | .99                |

**Note:**—FA indicates fractional anisotropy.

\*  $P < .05$ .

†  $P < .01$ .

‡  $P < .001$ .

§ FA in the most affected hemisphere (significantly higher than that in the contralateral one).