

Supplementary Material

Extra-Basal Ganglia Brain Structures Are Related to Motor Reserve in Parkinson's Disease

Supplementary Table 1. Correlation analysis of parkinsonism and DAT scan data of the more affected side, presented with ρ -value and p-value, respectively. Values with corrected p-value less than 0.05 are shown in bold.

	SNBR of the more affected side		
	Putamen	Caudate	Striatum
UPDRS part 3 total score	-0.1290, 0.0737	-0.0517, 0.475	-0.0957, 0.1858
UPDRS part 3 sub-score			
tremor	0.0427, 0.5558	-0.0171, 0.8139	0.0094, 0.8965
rigidity	-0.1101, 0.1275	0.0323, 0.6561	-0.0320, 0.6591
bradykinesia	-0.1822, 0.0112	-0.0709, 0.3275	-0.1336, 0.0639
axial symptoms	-0.0752, 0.2983	-0.0602, 0.4053	-0.0753, 0.2978
More affected side			
tremor	-0.0414, 0.5674	-0.0472, 0.5147	-0.0506, 0.4848
rigidity	-0.1441, 0.0456	0.0715, 0.3228	-0.0228, 0.7533
bradykinesia	-0.2334, 0.0011	-0.0382, 0.5978	-0.1370, 0.0574

DAT, dopamine transporter; SNBR, the specific to nonspecific binding ratio; UPDRS, Unified Parkinson's disease rating scale.

Supplementary Table 2. Correlation analysis between the MRE and values of fractional anisotropy (Bonferroni corrected). Only significantly correlated structures are illustrated in the table. Values with corrected p-value less than 0.05 are shown in bold.

Gyrus	L/R	Anatomical and modified Cyto-architectonic descriptions	FA		DC	
			rho	adj-pval	rho	adj-pval
Superior Frontal Gyrus	L	A8m, medial area 8	0.2749	0.0268	0.2504	0.1092
Superior Frontal Gyrus	L	A9l, lateral area 9	0.2610	0.0606	0.2661	0.0452
Superior Frontal Gyrus	R	A9l, lateral area 9	0.2603	0.0631	0.2954	0.0075
Superior Frontal Gyrus	L	A6dl, dorsolateral area 6	0.2594	0.0664	0.2761	0.0250
Superior Frontal Gyrus	R	A6dl, dorsolateral area 6	0.2701	0.0358	0.2650	0.0481
Superior Frontal Gyrus	L	A6m, medial area 6	0.2690	0.0382	0.2525	0.0972
Superior Frontal Gyrus	R	A6m, medial area 6	0.2824	0.0170	0.2497	0.1134
Superior Frontal Gyrus	L	A9m,medial area 9	0.2726	0.0308	0.2509	0.1063
Superior Frontal Gyrus	R	A9m,medial area 9	0.2715	0.0328	0.2556	0.0821
Middle Frontal Gyrus	R	A9/46v, ventral area 9/46	0.2418	0.1729	0.2664	0.0445
Middle Frontal Gyrus	R	A6vl, ventrolateral area 6	0.2630	0.0539	0.2705	0.0350
Inferior Frontal Gyrus	R	A44d,dorsal area 44	0.2688	0.0386	0.2534	0.0926
Inferior Frontal Gyrus	L	IFS, inferior frontal sulcus	0.2742	0.0280	0.2443	0.1520
Inferior Frontal Gyrus	R	IFS, inferior frontal sulcus	0.2702	0.0356	0.2633	0.0531
Inferior Frontal Gyrus	L	A45c, caudal area 45	0.2801	0.0196	0.2427	0.1652
Inferior Frontal Gyrus	R	A45c, caudal area 45	0.2734	0.0295	0.2513	0.1040
Inferior Frontal Gyrus	L	A45r, rostral area 45	0.2794	0.0205	0.2442	0.1527
Inferior Frontal Gyrus	L	A44v, ventral area 44	0.2698	0.0365	0.2304	0.3116
Orbital Gyrus	L	A14m, medial area 14	0.2649	0.0485	0.2556	0.0823
Orbital Gyrus	L	A12/47l, lateral area 12/47	0.2865	0.0132	0.2542	0.0888
Orbital Gyrus	R	A12/47l, lateral area 12/47	0.2770	0.0237	0.2686	0.0391
Precentral Gyrus	R	A4hf, area 4(head and face region)	0.2497	0.1137	0.2726	0.0309
Precentral Gyrus	L	A6cdl, caudal dorsolateral area 6	0.2272	0.3646	0.2758	0.0254
Precentral Gyrus	L	A4t, area 4(trunk region)	0.2845	0.0150	0.2306	0.3077
Precentral Gyrus	R	A4tl, area 4(tongue and larynx region)	0.2781	0.0222	0.2300	0.3173

Paracentral Lobule	R	A1/2/3ll, area1/2/3 (lower limb region)	0.2682	0.0400	0.2292	0.3311
Paracentral Lobule	L	A4ll, area 4, (lower limb region)	0.2656	0.0466	0.1955	1.0000
Paracentral Lobule	R	A4ll, area 4, (lower limb region)	0.2768	0.0240	0.2487	0.1197
Superior Temporal Gyrus	L	A22c, caudal area 22	0.2662	0.0448	0.2150	0.6588
Inferior Temporal Gyrus	L	A20il, intermediate lateral area 20	0.2703	0.0354	0.2201	0.5162
Parahippocampal Gyrus	L	TI, area TI(temporal agranular insular cortex)	0.2662	0.0450	0.2395	0.1952
Precuneus	R	A7m, medial area 7(PEp)	0.2735	0.0292	0.2004	1.0000
Precuneus	R	A5m, medial area 5(PEm)	0.2651	0.0478	0.2238	0.4319
Precuneus	R	A31, area 31 (Lc1)	0.2650	0.0481	0.2366	0.2275
MedioVentral Occipital Cortex	R	rCunG, rostral cuneus gyrus	0.2657	0.0464	0.1668	1.0000

FA, fractional anisotropy; L, left; R, right. Only significantly correlated structures are illustrated in the table.

Supplementary Figure 1. Scatter plot of motor reserve estimate and levodopa equivalent daily dose after 2 years from the baseline. The line indicates the linear-fit trendline.

