

## **Supplemental Materials**

### **MATERIALS AND METHODS**

#### **Subject Selection**

Eleven inpatients without neurological diseases requiring subarachnoid block in anesthesia were used as controls for CSF biochemical evaluation (3 patients were lower limb bone fracture, 3 patients were varicocele, 2 patients were primary varicose vein of the lower extremity, 3 patients were meniscus injury). To rule out the presence of central nervous system disease, those participants underwent neurophysical examination by an experienced clinician (Y.F., with 20 years of neurology experience), and a routine brain and spinal cord MR examination (only T2WI). Eleven participants as controls for CSF biochemical evaluation were all signed an informed consent form.

#### **Brain image analysis**

Diffusion-weighted image preprocessing was performed based on FMRIB Software Library (FSL) (<http://fsl.fmrib.ox.ac.uk/fsl>) and the Diffusion Toolkit (DTK, <http://www.trackvis.org/dtk/>). The preprocessing procedure included DICOM format conversion, correcting for eddy current distortion and head motion, skull removal, and calculating DTI metrics. Finally, parametric maps of fractional anisotropy (FA), mean diffusivity (MD), RD, and AD were obtained for tract based spatial statistics (TBSS) and tractography analysis.

#### **TBSS analysis**

Voxel-based whole-brain white matter measures (DTI metrics) were assessed with TBSS using FSL 5.0. All FA images of patients with SPG5 and HCs, were nonlinearly registered to the FMRIB58\_FA template space, and the mean FA skeleton map was created by setting FA threshold at 0.2. And then, the 4D projected FA data was created for voxel-wise statistical analyses by projecting all subjects' aligned FA images onto the mean FA skeleton. The same analysis was repeated for the other diffusion-derived images (MD, AD, and RD) by projecting each subject's aligned images onto the mean FA skeleton map. TBSS statistical analysis was performed using a nonparametric permutation inference tool (randomise) implemented in FSL. DTI metrics were compared between two groups using a two-sample independent t-test. Statistical maps were corrected for multiple comparisons with the Threshold-Free Cluster Enhancement (TFCE) option and using 5000

permutations ( $P < .001$ , family-wise error correction). A general linear model was employed to investigate possible correlations between TBSS results and clinical data, applying a TFCE to correct for multiple comparisons.

### **Voxel-based morphometry (VBM) analysis**

VBM analysis was performed to analyze the differences in the grey matter between HC and SPG5 using CAT12 toolbox of Statistical Parametric Mapping version 12 (SPM12; Wellcome Department of Imaging Neuroscience, London, UK). The 3D T1-weighted images were first segmented into different tissue subclasses (grey matter, white matter, and cerebrospinal fluid), and these subclasses were normalized to standard space using a non-linear Diffeomorphic Anatomic Registration Through Exponentiated Lie algebra algorithm (DARTEL). The grey matter maps were then modulated with the Jacobian determinant of the deformation. The modulated grey matter maps were finally smoothed with an 8-mm full width at half maximum (FWHM) Gaussian kernel.

### **Spinal cord image analysis**

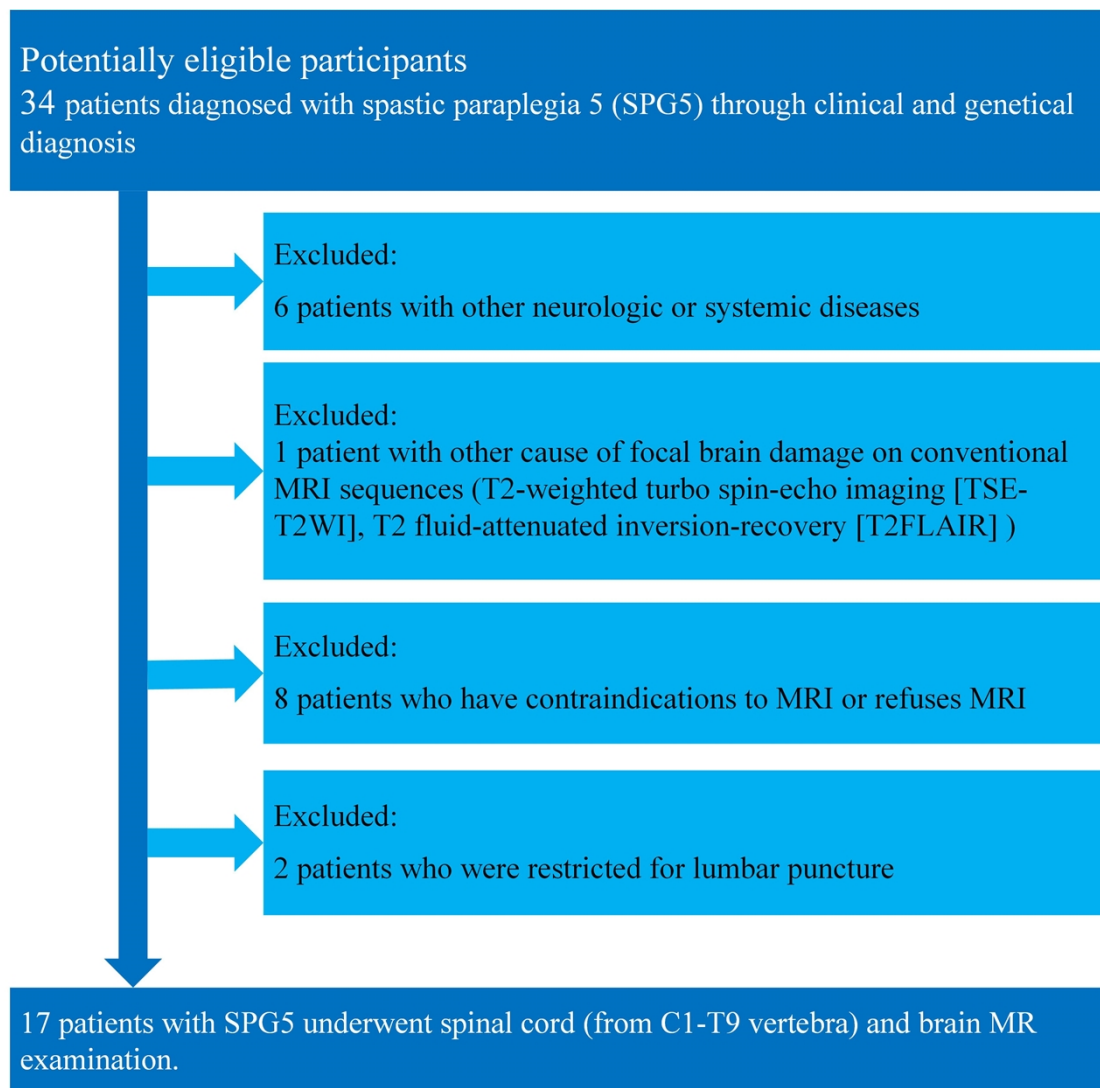
Atlas-based analyses of spinal cord DTI and T1 mapping data were performed by using the open-source software Spinal Cord Toolbox (Version 4.01) (20). The analysis pipeline included the following steps (Fig 2):

1) Preprocessing of spinal cord anatomy: the spinal cord segmentation was performed based on high-resolution 3D-T1WI by using “sct\_propseg”, and vertebral levels were labeled by using “sct\_label\_utils”. The segmentation results were checked and were slightly manually corrected if necessary. Secondly, the PAM50 template was registered to the T1-weighted images using the “sct\_register\_to\_template” function, and inverse warping fields were also recorded.

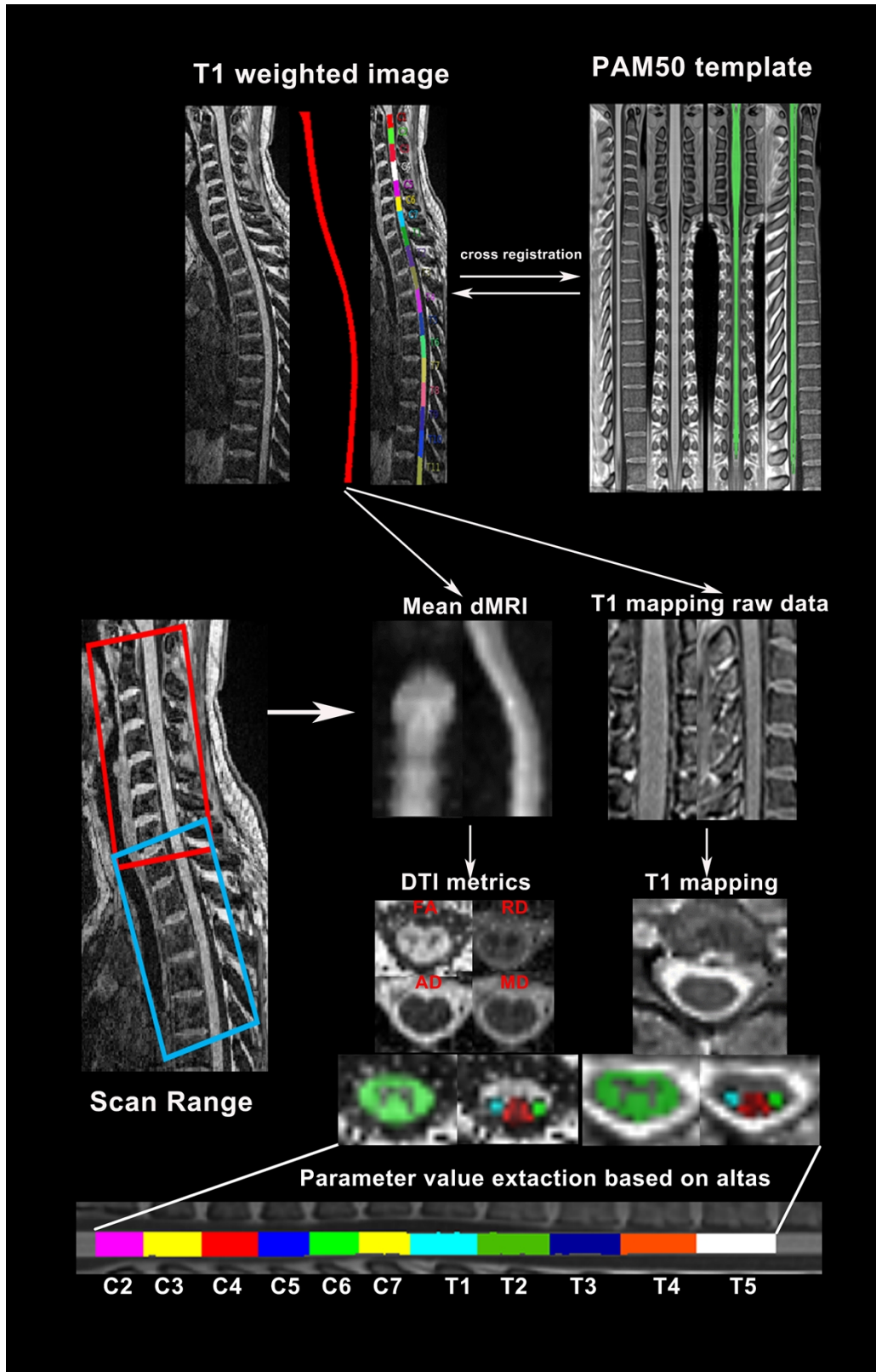
2) Processing of DTI data: DTI data were firstly preprocessed by computing the mean map from dMRI, segmenting the spinal cord, and creating masks around the cord. Motion correction of dMRI data was then performed by using “sct\_dmri\_moco” function, and DTI metrics were calculated with Robust Estimation of Tensors by Outlier Rejection (RESTORE) method using “sct\_dmri\_compute\_dti” function. The PAM50 template was mapped onto DTI multiparametric data along with cross modal registration of the anatomical image to the mean DWI by using “sct\_register\_multimodal” and “sct\_warp\_template”, respectively. FA, MD, AD and RD values of five regions (white matter, grey matter, dorsal columns, left and right lateral corticospinal tract) in the spinal cord from C2 to T5 segments were extracted by using

“sct\_extract\_metrics” with the default maximum-likelihood method. DTI image quality of each spinal cord segment was visually checked and DTI metrics were excluded if ghost artifacts were present. The spinal cord segments that finally met the quality control requirements were summarized in Table E2.

3) Processing of T1mapping data: T1 maps were inline constructed at the scanner using the software MapIt (Siemens Healthineers). Similar to the processing of DTI data, the PAM50 template was warped to the T1 map along with the cross-modal registration of the anatomical image to T1 mapping raw data (T1-weighted volume interpolated body examination [VIBE] with 15° flip angles, showing more T1 weight). T1 values of five regions (white matter, grey matter, dorsal columns, left and right lateral corticospinal tract) of the spinal cord from C2 to T5 segments were extracted by using “sct\_extract\_metrics” with the default maximum-likelihood method.



**Fig 1: Flowchart shows the inclusion and exclusion criteria of the patients with SPG5.**



**Fig 2: Schematic representation of the pipeline applied to DTI and T1-mapping sequences processing of the spinal cord.**

**Table 1: The parameters of MR sequences**

Sequence	TR (msec)	TE (msec)	FOV (mm)	Voxel Size (mm)	Flip angle (deg)	Average	TA min: sec
<b>Spinal cord</b>							
<b>3D-T1-MPRAGE</b>	2300	3.43	250 × 250	1.0 × 1.0 × 0.8	9	1	5: 21
<b>3D-T2-SPACE</b>	1500	135	250 × 250	0.4 × 0.4 × 0.8	140	1.4	5: 54
<b>DTI</b>	5100	99	129 × 129	1.0 × 1.0 × 4.0		12 (b = 0) 3 (b = 800)	6:24
<b>T1 mapping</b>	4.96	1.84	200 × 200	1.0 × 1.0 × 0.9	2	1	3:34
<b>Brain</b>							
<b>3D-T1-MPRAGE</b>	2300	2.32	240 × 240	0.9 × 0.9 × 0.9	8	1	5:21
<b>2D-T2</b>	6000	125	220 × 220	0.6 × 0.6 × 5.0	90	1	1:12
<b>2D-FLAIR</b>	8500	81	220 × 220	0.7 × 0.7 × 3.0	150	1	2:16
<b>DTI</b>	11700	96	232 × 232	2.0 × 2.0 × 2.0		3 (b = 0) 1 (b = 1000)	7:03

Note. – DTI and T1 mapping of the spinal cord consisted of two axial slabs: cervical slab was centered and optimized to be

perpendicular to the spinal cord long axis at middle-C3 vertebra level (covering from C2 to C7), and thoracic slab was centered at middle-T2 vertebra level (covering from T1 to T5).

**Table 2: The number of spinal cord segments of DTI and T1 mapping datasets were included in this study**

Data	Group	C2	C3	C4	C5	C6	C7	T1	T2	T3	T4	T5
<b>DTI</b>												
	<b>SPG5</b>	16	17	17	16	13	6	10	14	13	16	15
	<b>HC</b>	17	17	17	16	17	16	8	9	11	13	13
<b>T1 mapping</b>												
	<b>SPG5</b>	17	17	17	17	17	17	16	16	16	17	17
	<b>HC</b>	17	17	17	17	17	17	17	16	16	16	17

Note: -- Image quality assessment was performed. If ghost artifacts (motion or inaccurate center frequency determination) were

present in the DTI or T1 mapping images, images of that segment of the spinal cord were excluded from the study. The spinal cord

segments that finally met the quality control were included.

**Table 3: Analysis the FA, RD, MD, AD, and T1 values of dorsal column in the spinal cord**

	cervical spinal cord				thoracic spinal cord		
DTI	SPG5 (n=17)	HC (n=17)	P-value	DTI	SPG5 (n=17)	HC (n=17)	P-value
<b>C2</b>				<b>T1</b>			
FA	0.62±0.05	0.79±0.04	< .001**	FA	0.53±0.07	0.6±0.07	.12
RD	0.58±0.09	0.38±0.15	< .001**	RD	0.84±0.19	0.79±0.3	.76
MD	1.03±0.07	0.89±0.12	< .001**	MD	1.27±0.16	1.23±0.34	.90
AD	1.93±0.09	1.97±0.42	.02	AD	2.11±0.13	2.1±0.44	.57
T1	1900±252	1184±146	< .001**	T1	1111±219	921±105	.01
<b>C3</b>				<b>T2</b>			
FA	0.59±0.06	0.78±0.03	< .001**	FA	0.56±0.05	0.64±0.1	.01
RD	0.7±0.14	0.34±0.11	< .001**	RD	0.72±0.18	0.48±0.18	.01
MD	1.14±0.12	0.88±0.2	< .001**	MD	1.12±0.21	0.99±0.37	.18
AD	2.04±0.14	2.03±0.24	.47	AD	1.91±0.32	1.78±0.47	.60
T1	2073±291	1319±139	< .001**	T1	1127±229	828±80	< .001**
<b>C4</b>				<b>T3</b>			
FA	0.6±0.05	0.77±0.04	< .001**	FA	0.59±0.09	0.64±0.07	.15
RD	0.68±0.11	0.41±0.11	< .001**	RD	0.57±0.22	0.53±0.12	.57
MD	1.11±0.1	0.98±0.11	< .001**	MD	0.96±0.21	0.94±0.12	.73
AD	1.99±0.1	2.12±0.13	.01	AD	1.75±0.26	1.76±0.24	.82
T1	2096±351	1445±271	< .001**	T1	1227±344	855±156	.001*
<b>C5</b>				<b>T4</b>			
FA	0.57±0.05	0.75±0.05	< .001**	FA	0.6±0.06	0.66±0.05	.02
RD	0.69±0.13	0.43±0.11	< .001**	RD	0.69±0.19	0.54±0.12	.02
MD	1.1±0.13	0.98±0.1	.02	MD	1.1±0.19	0.94±0.19	.02
AD	1.92±0.16	2.06±0.11	.02	AD	1.9±0.26	1.79±0.33	.35
T1	2061±266	1441±225	< .001**	T1	1233±324	946±157	.002*
<b>C6</b>				<b>T5</b>			
FA	0.56±0.06	0.7±0.05	< .001**	FA	0.54±0.09	0.65±0.09	.004*
RD	0.67±0.14	0.53±0.14	.01	RD	0.79±0.22	0.61±0.24	.05
MD	1.06±0.12	1.04±0.13	.51	MD	1.21±0.17	1.07±0.27	.06
AD	1.84±0.11	2.06±0.14	< .001**	AD	2.03±0.09	2.01±0.41	.68
T1	1920±309	1295±102	< .001**	T1	1250±411	957±190	.01
<b>C7</b>							
FA	0.57±0.03	0.66±0.04	.001*				
RD	0.67±0.12	0.57±0.09	.04				
MD	1.09±0.14	1.05±0.1	.64				
AD	1.93±0.2	2.01±0.19	.36				
T1	1471±379	1134±126	.001*				

Note. — Data are mean ± standard deviation. RD, MD, AD ( $\times 10^{-3}$  mm<sup>2</sup>/s), T1 (ms).

Student *t* test was used for continuous variables with Bonferroni correction for multiple comparisons. \**P*-value < .05, \*\**P*-value < .005 (after Bonferroni correction 0.05/11, 0.005/11).

**Table 4: Analysis the FA, RD, MD, AD, and T1 values of white matter in the spinal cord**

cervical spinal cord				thoracic spinal cord			
DTI	SPG5 (n=17)	HC (n=17)	P-value	DTI	SPG5 (n=17)	HC (n=17)	P-value
<b>C2</b>				<b>T1</b>			
FA	0.6±0.05	0.77±0.04	< .001**	FA	0.51±0.04	0.61±0.04	< .001**
RD	0.54±0.09	0.36±0.17	< .001**	RD	0.82±0.12	0.64±0.15	0.01
MD	0.94±0.06	0.84±0.08	< .001**	MD	1.21±0.11	1.06±0.2	0.20
AD	1.74±0.07	1.81±0.42	< .001**	AD	1.99±0.12	1.92±0.32	0.97
T1	1558±205	1122±113	< .001**	T1	1049±284	853±99	0.01
<b>C3</b>				<b>T2</b>			
FA	0.58±0.05	0.75±0.04	< .001**	FA	0.54±0.05	0.63±0.06	<b>0.002*</b>
RD	0.63±0.11	0.35±0.1	< .001**	RD	0.69±0.16	0.52±0.16	0.03
MD	1.03±0.09	0.82±0.2	< .001**	MD	1.06±0.19	0.9±0.2	0.08
AD	1.82±0.07	1.82±0.29	0.12	AD	1.8±0.29	1.65±0.32	0.22
T1	1680±244	1215±104	< .001**	T1	1087±240	884±70	0.01
<b>C4</b>				<b>T3</b>			
FA	0.58±0.04	0.73±0.04	< .001**	FA	0.55±0.06	0.64±0.05	<b>0.001*</b>
RD	0.6±0.1	0.4±0.09	< .001**	RD	0.61±0.17	0.47±0.08	0.01
MD	0.99±0.09	0.91±0.09	0.01	MD	0.97±0.18	0.86±0.11	0.02
AD	1.76±0.09	1.92±0.1	< .001**	AD	1.7±0.24	1.63±0.23	0.53
T1	1790±308	1321±163	< .001**	T1	1188±291	937±88	0.01
<b>C5</b>				<b>T4</b>			
FA	0.56±0.04	0.71±0.04	< .001**	FA	0.54±0.06	0.65±0.04	< .001**
RD	0.62±0.1	0.44±0.09	< .001**	RD	0.71±0.15	0.48±0.13	< .001**
MD	0.99±0.09	0.93±0.08	0.11	MD	1.09±0.14	0.88±0.2	<b>0.001*</b>
AD	1.72±0.1	1.9±0.08	< .001**	AD	1.85±0.18	1.68±0.35	0.05
T1	1798±216	1352±218	< .001**	T1	1174±257	975±147	0.02
<b>C6</b>				<b>T5</b>			
FA	0.54±0.05	0.67±0.04	< .001**	FA	0.52±0.08	0.63±0.06	< .001**
RD	0.63±0.11	0.51±0.08	<b>0.001*</b>	RD	0.86±0.19	0.62±0.12	<b>0.001*</b>
MD	0.98±0.09	0.96±0.08	>.99	MD	1.26±0.16	1.07±0.17	0.01
AD	1.67±0.08	1.88±0.11	< .001**	AD	2.05±0.14	1.97±0.35	0.41
T1	1710±225	1283±197	< .001**	T1	1236±324	1015±210	0.03
<b>C7</b>							
FA	0.52±0.04	0.64±0.04	< .001**				
RD	0.7±0.14	0.55±0.1	0.01				
MD	1.06±0.15	0.99±0.1	0.45				
AD	1.8±0.18	1.87±0.16	0.26				
T1	1342±266	1140±194	0.01				

Note. — Data are mean ± standard deviation. RD, MD, AD ( $\times 10^{-3}$  mm<sup>2</sup>/s), T1 (ms).

Student *t* test was used for continuous variables with Bonferroni correction for multiple comparisons. \**P*-value < .05, \*\**P*-value < .005 (after Bonferroni correction 0.05/11, 0.005/11).



**Table 5: Analysis the FA, RD, MD, AD, and T1 values of left lateral corticospinal tract in the spinal cord**

cervical spinal cord				thoracic spinal cord			
DTI	SPG5 (n=17)	HC (n=17)	P-value	DTI	SPG5 (n=17)	HC (n=17)	P-value
<b>C2</b>				<b>T1</b>			
FA	0.58±0.09	0.76±0.05	< .001**	FA	0.49±0.07	0.59±0.09	.03
RD	0.64±0.12	0.4±0.1	< .001**	RD	0.8±0.13	0.78±0.32	<.99
MD	1.03±0.09	0.9±0.21	.02	MD	1.16±0.14	1.21±0.36	.41
AD	1.8±0.15	1.97±0.26	.002*	AD	1.88±0.22	2.07±0.49	.17
T1	1572±199	1260±138	< .001**	T1	1028±189	916±141	.11
<b>C3</b>				<b>T2</b>			
FA	0.57±0.06	0.74±0.04	< .001**	FA	0.54±0.08	0.64±0.06	.01
RD	0.7±0.12	0.43±0.08	< .001**	RD	0.78±0.23	0.55±0.19	.04
MD	1.1±0.1	0.96±0.08	< .001**	MD	1.16±0.24	0.95±0.24	.06
AD	1.9±0.1	2.02±0.13	.01	AD	1.92±0.32	1.73±0.38	.25
T1	1627±207	1287±111	< .001**	T1	1093±243	890±86	.01
<b>C4</b>				<b>T3</b>			
FA	0.58±0.06	0.72±0.05	< .001**	FA	0.57±0.07	0.65±0.1	.02
RD	0.66±0.15	0.5±0.1	< .001**	RD	0.72±0.18	0.53±0.18	.03
MD	1.04±0.15	1±0.09	.59	MD	1.11±0.19	0.93±0.16	.03
AD	1.85±0.2	2±0.12	.003*	AD	1.89±0.26	1.73±0.23	.06
T1	1744±281	1408±142	< .001**	T1	1257±345	983±138	.02
<b>C5</b>				<b>T4</b>			
FA	0.55±0.05	0.69±0.06	< .001**	FA	0.61±0.08	0.68±0.04	.01
RD	0.69±0.1	0.53±0.1	< .001**	RD	0.71±0.14	0.48±0.13	< .001**
MD	1.04±0.11	1±0.08	.25	MD	1.1±0.14	0.89±0.23	.001*
AD	1.81±0.13	1.93±0.1	.01	AD	1.89±0.18	1.72±0.44	.29
T1	1730±232	1475±286	.001*	T1	1243±306	986±165	.001*
<b>C6</b>				<b>T5</b>			
FA	0.55±0.07	0.65±0.05	< .001**	FA	0.53±0.08	0.71±0.07	< .001**
RD	0.66±0.14	0.59±0.11	.21	RD	0.79±0.21	0.44±0.15	< .001**
MD	1±0.1	1.04±0.12	.25	MD	1.17±0.22	0.93±0.21	.003*
AD	1.69±0.07	1.93±0.18	< .001**	AD	1.94±0.29	1.9±0.41	.62
T1	1695±283	1436±524	< .001**	T1	1167±359	953±213	.03
<b>C7</b>							
FA	0.53±0.03	0.65±0.04	< .001**				
RD	0.68±0.16	0.57±0.09	.15				
MD	1.04±0.19	1.03±0.12	.54				
AD	1.74±0.25	1.94±0.21	.12				
T1	1299±307	1217±222	.15				

Note. — Data are mean ± standard deviation. RD, MD, AD ( $\times 10^{-3}$  mm<sup>2</sup>/s), T1 (ms).

Student *t* test was used for continuous variables with Bonferroni correction for multiple comparisons. \**P*-value < .05, \*\**P*-value < .005 (after Bonferroni correction 0.05/11, 0.005/11).

**Table 6: Analysis the FA, RD, MD, AD, and T1 values of right lateral corticospinal tract in the spinal cord**

	cervical spinal cord				thoracic spinal cord		
DTI	SPG5 (n=17)	HC (n=17)	<i>P</i> -value	DTI	SPG5 (n=17)	HC (n=17)	<i>P</i> -value
<b>C2</b>				<b>T1</b>			
FA	0.57±0.06	0.72±0.07	< .001**	FA	0.49±0.1	0.6±0.08	.02
RD	0.64±0.09	0.45±0.1	< .001**	RD	0.84±0.22	0.73±0.24	.36
MD	1.01±0.09	0.94±0.09	.03	MD	1.21±0.17	1.18±0.24	.76
AD	1.75±0.18	1.91±0.16	.002*	AD	1.95±0.14	2.06±0.3	.24
T1	1559±214	1207±175	< .001**	T1	1126±237	927±112	.001*
<b>C3</b>				<b>T2</b>			
FA	0.56±0.07	0.7±0.05	< .001**	FA	0.54±0.09	0.64±0.1	.03
RD	0.69±0.14	0.46±0.12	< .001**	RD	0.76±0.23	0.56±0.21	.05
MD	1.08±0.12	0.96±0.13	.01	MD	1.12±0.24	0.95±0.24	.14
AD	1.85±0.12	1.95±0.18	.02	AD	1.84±0.32	1.74±0.36	.48
T1	1690±235	1327±143	< .001**	T1	1251±298	972±124	.003*
<b>C4</b>				<b>T3</b>			
FA	0.56±0.06	0.69±0.04	< .001**	FA	0.55±0.08	0.64±0.05	.02
RD	0.66±0.13	0.51±0.07	.001*	RD	0.76±0.19	0.55±0.12	.01
MD	1.02±0.12	0.99±0.08	.50	MD	1.11±0.22	0.93±0.2	.06
AD	1.75±0.13	1.91±0.14	.003*	AD	1.81±0.34	1.73±0.35	.69
T1	1802±342	1441±141	< .001**	T1	1365±268	1063±143	< .001**
<b>C5</b>				<b>T4</b>			
FA	0.54±0.06	0.66±0.06	< .001**	FA	0.56±0.1	0.66±0.06	.01
RD	0.69±0.13	0.56±0.1	.003*	RD	0.76±0.24	0.5±0.16	.001*
MD	1.03±0.12	1±0.09	.56	MD	1.17±0.24	0.9±0.23	.001*
AD	1.72±0.12	1.89±0.11	< .001**	AD	1.98±0.38	1.69±0.4	.03
T1	1754±239	1476±176	.001*	T1	1341±227	1127±136	.002*
<b>C6</b>				<b>T5</b>			
FA	0.53±0.06	0.65±0.05	< .001**	FA	0.52±0.12	0.62±0.11	.03
RD	0.67±0.11	0.59±0.1	.06	RD	0.84±0.28	0.63±0.23	.03
MD	1±0.09	1.03±0.1	.36	MD	1.22±0.23	1.06±0.22	.03
AD	1.67±0.09	1.93±0.16	< .001**	AD	2±0.2	1.91±0.32	.59
T1	1679±281	1348±144	< .001**	T1	1244±319	1003±171	.01
<b>C7</b>							
FA	0.55±0.06	0.65±0.05	.001*				
RD	0.65±0.13	0.57±0.09	.23				
MD	1.02±0.15	1.02±0.09	.64				
AD	1.75±0.24	1.92±0.16	.05				
T1	1336±365	1158±147	.05				

Note. — Data are mean ± standard deviation. RD, MD, AD ( $\times 10^{-3}$  mm<sup>2</sup>/s), T1 (ms).

Student *t* test was used for continuous variables with Bonferroni correction for multiple comparisons. \**P*-value < .05, \*\**P*-value < .005 (after Bonferroni correction 0.05/11, 0.005/11).

**Table 7: Analysis the FA, RD, MD, AD, and T1 values of grey matter in the spinal cord**

cervical spinal cord				thoracic spinal cord			
DTI	SPG5 (n=17)	HC (n=17)	P-value	DTI	SPG5 (n=17)	HC (n=17)	P-value
<b>C2</b>				<b>T1</b>			
FA	0.50±0.08	0.59±0.04	< .001**	FA	0.62±0.04	0.67±0.02	.01
RD	0.70±0.09	0.60±0.07	.01	RD	0.56±0.04	0.48±0.09	.01
MD	0.97±0.1	0.92±0.07	.05	MD	0.98±0.08	0.85±0.1	.003*
AD	1.51±0.1	1.58±0.09	.04	AD	1.76±0.12	1.62±0.18	.08
T1	1772±190	1474±192	< .001**	T1	1110±265	1168±128	.11
<b>C3</b>				<b>T2</b>			
FA	0.52±0.07	0.58±0.06	.01	FA	0.62±0.05	0.66±0.07	.16
RD	0.67±0.1	0.58±0.07	.01	RD	0.56±0.08	0.46±0.12	.05
MD	0.95±0.08	0.91±0.05	.11	MD	0.93±0.11	0.81±0.15	.05
AD	1.53±0.08	1.58±0.04	.04	AD	1.68±0.23	1.53±0.28	.18
T1	1819±220	1611±129	.01	T1	1105±159	1103±103	.81
<b>C4</b>				<b>T3</b>			
FA	0.49±0.06	0.53±0.04	.004*	FA	0.63±0.08	0.65±0.06	.73
RD	0.65±0.05	0.57±0.05	< .001**	RD	0.56±0.13	0.49±0.08	.23
MD	0.9±0.05	0.87±0.03	.01	MD	0.93±0.12	0.85±0.1	.07
AD	1.4±0.1	1.46±0.04	.02	AD	1.69±0.2	1.57±0.22	.33
T1	1850±270	1704±186	.11	T1	1161±164	1205±142	.32
<b>C5</b>				<b>T4</b>			
FA	0.46±0.06	0.51±0.05	.01	FA	0.6±0.07	0.66±0.07	.05
RD	0.67±0.07	0.62±0.05	.01	RD	0.59±0.08	0.51±0.14	.06
MD	0.89±0.07	0.87±0.03	.22	MD	0.98±0.08	0.89±0.18	.05
AD	1.34±0.09	1.42±0.06	.001*	AD	1.75±0.19	1.65±0.31	.09
T1	1786±231	1675±145	.15	T1	1194±249	1282±188	.08
<b>C6</b>				<b>T5</b>			
FA	0.47±0.09	0.51±0.04	.01	FA	0.6±0.09	0.68±0.09	.03
RD	0.69±0.09	0.62±0.05	.01	RD	0.64±0.16	0.5±0.16	.02
MD	0.91±0.08	0.89±0.04	.30	MD	1.07±0.13	0.92±0.18	.01
AD	1.36±0.09	1.44±0.07	.01	AD	1.91±0.15	1.76±0.32	.06
T1	1707±249	1651±214	.36	T1	1218±343	1290±241	.26
<b>C7</b>							
FA	0.51±0.09	0.56±0.05	.23				
RD	0.65±0.09	0.63±0.1	.33				
MD	0.95±0.05	0.95±0.09	.45				
AD	1.54±0.14	1.59±0.14	.50				
T1	1377±321	1476±193	.32				

Note. — Data are mean ± standard deviation. RD, MD, AD ( $\times 10^{-3}$  mm<sup>2</sup>/s), T1 (ms).

Student *t* test was used for continuous variables with Bonferroni correction for multiple comparisons. \**P*-value < .05, \*\**P*-value < .005 (after Bonferroni correction 0.05/11, 0.005/11).