Journal of Alzheimer's Disease 33 (2013) 1–2
IOS Press

Supplementary Data

MRI Signatures of Brain Macrostructural Atrophy and Microstructural Degradation in Frontotemporal Lobar Degeneration Subtypes

Yu Zhang[a,b,*], Maria Carmela Tartaglia[c,d], Norbert Schuff[a,b], Gloria C. Chiang[a,b], Christopher Ching[a,b], Howard J. Rosen[c], Maria Luisa Gorno-Tempini[c], Bruce L. Miller[c] and Michael W. Weiner[a,b]
[a]*Department of Veterans Affairs Medical Center, Center for Imaging of Neurodegenerative Diseases, San Francisco, CA, USA*
[b]*Department of Radiology, University of California, San Francisco, CA, USA*
[c]*Department of Neurology, Memory and Aging Center, University of California, San Francisco, CA, USA*
[d]*University Health Network and Tanz Centre for Research in Neurodegenerative Disease, University of Toronto, Toronto, ON, Canada*

Handling Associate Editor: J. Wesson Ashford

Accepted 4 August 2012

*Correspondence to: Yu Zhang, MD, Center for Imaging of Neurodegenerative Diseases, VA Medical Center, 4150, Clement Street, San Francisco, CA 94121, USA. Tel.: +1 415 2214810; Ext: 2158; Fax: +1 415 6682864; E-mail: Yu.Zhang@ucsf.edu.

ISSN 1387-2877/13/$27.50

Supplementary Table 1
Mean and standard deviations (Std) of the DTI values (FA, DA, and DR) in the fiber TOI of each FTLD subgroup, and the FDR-adjusted p-values of the paired-group differences between each FTLD subtype and the control (CN). The units of DA and DR are 10^3 mm^2/s

Regions	Values	CN Mean (Std)	bvFTD Mean (Std)	SD Mean (Std)	PNFA Mean (Std)	bvFTD vs. CN	SD vs. CN	PNFA vs. CN	bvFTD vs. SD	bvFTD vs. PNFA	SD vs. PNFA
a.CC	FA	0.57 (0.03)	0.50 (0.06)	0.53 (0.05)	0.55 (0.01)	<0.001	n.s.	n.s.	n.s.	0.01	n.s.
	DR	0.86 (0.12)	1.13 (0.22)	1.08 (0.22)	0.96 (0.07)	<0.001	0.008	n.s.	n.s.	0.006	n.s.
	DA	2.11 (0.14)	2.40 (0.21)	2.38 (0.23)	2.25 (0.12)	<0.001	0.003	n.s.	n.s.	0.02	n.s.
p.CC	FA	0.65 (0.03)	0.61 (0.04)	0.62 (0.03)	0.65 (0.04)	0.03	n.s.	n.s.	n.s.	n.s.	n.s.
	DR	0.70 (0.07)	0.82 (0.15)	0.79 (0.10)	0.73 (0.08)	0.001	0.03	n.s.	n.s.	n.s.	n.s.
	DA	1.99 (0.13)	2.09 (0.18)	2.06 (0.20)	1.98 (0.16)	0.03	n.s.	n.s.	n.s.	n.s.	n.s.
L.a.Cg	FA	0.49 (0.03)	0.44 (0.05)	0.48 (0.02)	0.46 (0.02)	0.001	n.s.	n.s.	n.s.	n.s.	n.s.
	DR	0.57 (0.04)	0.67 (0.09)	0.60 (0.06)	0.61 (0.04)	<0.001	n.s.	n.s.	n.s.	n.s.	n.s.
	DA	1.34 (0.06)	1.47 (0.12)	1.47 (0.05)	1.42 (0.07)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
R.a.Cg	FA	0.41 (0.03)	0.41 (0.04)	0.42 (0.03)	0.40 (0.03)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DR	0.67 (0.05)	0.72 (0.11)	0.66 (0.06)	0.64 (0.03)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DA	1.34 (0.06)	1.41 (0.14)	1.36 (0.05)	1.28 (0.05)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
L.pHP	FA	0.36 (0.02)	0.35 (0.03)	0.33 (0.02)	0.36 (0.02)	n.s.	0.03	n.s.	n.s.	n.s.	n.s.
	DR	0.82 (0.11)	0.94 (0.19)	1.14 (0.28)	0.82 (0.16)	0.04	<0.001	n.s.	n.s.	n.s.	0.04
	DA	1.40 (0.14)	1.52 (0.20)	1.76 (0.30)	1.42 (0.21)	n.s.	<0.001	n.s.	n.s.	n.s.	0.05
R.pHP	FA	0.37 (0.03)	0.36 (0.04)	0.34 (0.03)	0.38 (0.02)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DR	0.77 (0.11)	0.89 (0.19)	1.05 (0.42)	0.73 (0.08)	0.03	0.02	n.s.	n.s.	0.02	n.s.
	DA	1.32 (0.13)	1.47 (0.22)	1.64 (0.54)	1.29 (0.10)	0.05	0.04	n.s.	n.s.	n.s.	n.s.
L.Unc	FA	0.38 (0.02)	0.36 (0.03)	0.33 (0.02)	0.37 (0.01)	0.005	<0.001	n.s.	n.s.	n.s.	n.s.
	DR	0.72 (0.04)	0.83 (0.10)	1.05 (0.38)	0.76 (0.03)	<0.001	0.002	n.s.	n.s.	n.s.	n.s.
	DA	1.35 (0.05)	1.44 (0.09)	1.68 (0.43)	1.37 (0.05)	<0.001	0.008	n.s.	n.s.	n.s.	n.s.
R.Unc	FA	0.39 (0.03)	0.34 (0.04)	0.34 (0.03)	0.39 (0.01)	0.002	0.008	n.s.	n.s.	n.s.	n.s.
	DR	0.70 (0.06)	0.96 (0.22)	1.23 (0.60)	0.74 (0.04)	<0.001	0.002	n.s.	n.s.	0.05	n.s.
	DA	1.32 (0.06)	1.59 (0.24)	1.89 (0.69)	1.37 (0.07)	<0.001	0.003	n.s.	n.s.	0.04	n.s.
L.Arc	FA	0.48 (0.03)	0.46 (0.04)	0.46 (0.04)	0.46 (0.03)	n.s.	n.s.	0.03	n.s.	n.s.	n.s.
	DR	0.58 (0.04)	0.61 (0.05)	0.61 (0.06)	0.61 (0.04)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DA	1.30 (0.05)	1.30 (0.05)	1.32 (0.05)	1.29 (0.07)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
R.Arc	FA	0.48 (0.03)	0.48 (0.04)	0.50 (0.03)	0.48 (0.02)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DR	0.59 (0.05)	0.60 (0.06)	0.56 (0.04)	0.59 (0.03)	n.s.	n.s.	n.s.	0.03	n.s.	n.s.
	DA	1.30 (0.05)	1.33 (0.07)	1.30 (0.05)	1.32 (0.06)	n.s.	n.s.	n.s.	0.04	n.s.	n.s.
Fornix	FA	0.35 (0.02)	0.32 (0.02)	0.31 (0.04)	0.33 (0.02)	<0.001	<0.001	n.s.	n.s.	n.s.	n.s.
	DR	1.91 (0.28)	2.47 (0.25)	2.47 (0.30)	2.30 (0.29)	<0.001	<0.001	0.006	n.s.	n.s.	n.s.
	DA	3.05 (0.33)	3.66 (0.29)	3.66 (0.34)	3.52 (0.34)	<0.001	0.001	0.008	n.s.	n.s.	n.s.

a.CC/p.CC, anterior/posterior corpus callosum; L.a.Cg/R.a.Cg, left/right anterior cingulum; L.pHP/R.pHP, left/right parahippocampal cingulum; L.Unc/R.Unc, left/right uncinate fasciculus; L.Arc/R.Arc, left/right arcuate fasciculus.

Supplementary Table 2
Classification of FTLD and controls based on FA, DR, and DA measures from composite TOIs using logistic regression with cross-validated sensitivity, specificity, accuracy and area under a receiver operator characteristic curve (AUC)

Measures	Sensitivity (%)	Specificity (%)	Accuracy (%)	AUC
FA	76.3 ± 3.4	44.9 ± 4.8	62.2 ± 1.8	0.679
DR	74.3 ± 3.6	59.0 ± 5.4	**67.3 ± 2.0**[a,b]	0.722
DA	74.4 ± 4.1	51.3 ± 4.1	64.0 ± 2.2	0.691

Bold: differences in classification accuracy between DTI indices were significant by Wilcoxon signed rank tests.
[a]DR was better than FA ($p < 0.001$).
[b]DR was better than DA ($p < 0.01$).