

Multimodal meta-analysis of white matter abnormalities in obsessive-compulsive disorder

Supplementary Material

eTable 1. White matter volume: data acquisition

WM	Scanner strength (T)	TR / TE (ms / ms)	Flip angle (degrees)	Native resolution (mm ³)
Carmona <i>et al</i> 2007	1.5	13 / 4.2	15	0.9x0.9x2.0
Duran <i>et al</i> 2009	1.5	30 / 9.0	30	0.9x1.2x0.9
Koprivova <i>et al</i> 2009	3.0	2300 / 4.6	10	1.0x1.0x1.0
Lazaro <i>et al</i> 2011	1.5	12 / 5.2	20	0.9x0.9x1.5
Matsumoto <i>et al</i> 2010	1.5	21 / 9.2	30	1.0x1.0x1.0
Pujol <i>et al</i> 2004	1.5	40 / 4.0	30	1.0x1.3x2.5
Riffkin <i>et al</i> 2005	1.5	14 / 3.3	30	0.9x0.9x1.5
Togao <i>et al</i> 2010	1.5	1900 / 3.9	15	0.9x0.9x1.0
van den Heuvel <i>et al</i> 2009	1.5	2700 / 4.0	8	1.0x1.5x1.0
Yoo <i>et al</i> 2008	1.5	14 / 5.5	20	1.5x0.8x0.8

eTable 2. White matter volume: data processing

WM	Final resolution (mm ³)	Modulation	Smoothing kernel	Statistics	Statistical threshold
Carmona <i>et al</i> 2007	0.9x0.9x2.0	Yes	12	Parametric	p < 0.001 uncorrected 40 voxels extent
Duran <i>et al</i> 2009	2.0x2.0x2.0	Yes	12	Parametric	P < 0.05 FEW- corrected
Koprivova <i>et al</i> 2009	NA	Yes	10	Parametric	P < 0.05 FDR- corrected 100 voxels extent
Lazaro <i>et al</i> 2011	1.0x1.0x1.0	Yes	8	Parametric	P < 0.05 FWE- corrected
Matsumoto <i>et al</i> 2010	1.0x1.0x1.0	No	12	Parametric	P < 0.001 uncorrected 400 voxels extent
Pujol <i>et al</i> 2004	1.5	Yes	12	Parametric	p < 0.05 corrected
Riffkin <i>et al</i> 2005	NA	Yes	5	Non parametric	< 1 FP cluster
Togao <i>et al</i> 2010	NA	Yes	12	Parametric	P < 0.05 FDR- corrected 25 voxels extent
van den Heuvel <i>et al</i> 2009	2.0x2.0x2.0	NA	12	Parametric	p < 0.05 corrected
Yoo <i>et al</i> 2008	2.0x2.0x2.0	No	12	Parametric	p < 0.001 20 voxels extent

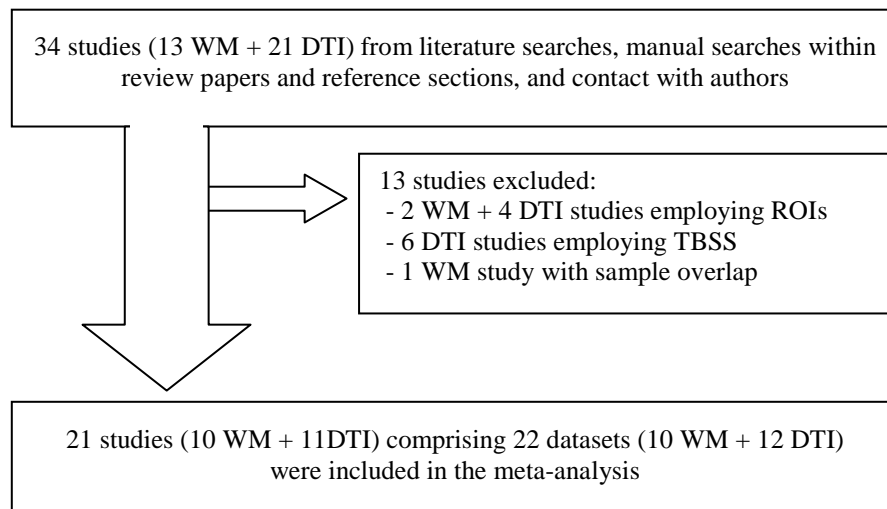
eTable 3. Fractional anisotropy: data acquisition

DTI	Scanner strength (T)	TR / TE (ms / ms)	Native resolution (mm ³)	Number of directions	b-factor (s/mm ²)
Admon <i>et al</i> 2012	1.5	12000 / 97.0	1.6x1.6x3.0	6	1000
Cannistraro <i>et al</i> 2001	1.5	10000 / 67.0	2.0x2.0x2.0	6	600
Fan <i>et al</i> 2012	1.5	9000 / 105.5	1.9x1.9x5.0	25	1000
Garibotto <i>et al</i> 2010	1.5	10804 / 78.0	1.9x1.9x2.3	35	1000
Gruner <i>et al</i> 2010	3.0	14000 / min	1.9x1.9x2.5	31	NA
Ha <i>et al</i> 2009	1.5	9200 / 83.0	2.0x2.0x2.0	12	1000
Li <i>et al</i> 2011	3.0	12000 / 70.8	1.9x1.9x3.0	15	1000
Menzies <i>et al</i> 2008	1.5	12000 / 93.0	2.3x1.9x4.0	25	1000
Nakamae <i>et al</i> 2008	1.5	6000 / 88.0	1.8x2.2x3.0	15	1000
Szeszko <i>et al</i> 2005	1.5	10000 / 86.7	1.7x1.7x5.0	25	1000
Yoo <i>et al</i> 2007	1.5	7390 / 62.0	1.7x1.7x4.0	6	600

eTable 4. Fractional anisotropy: data processing

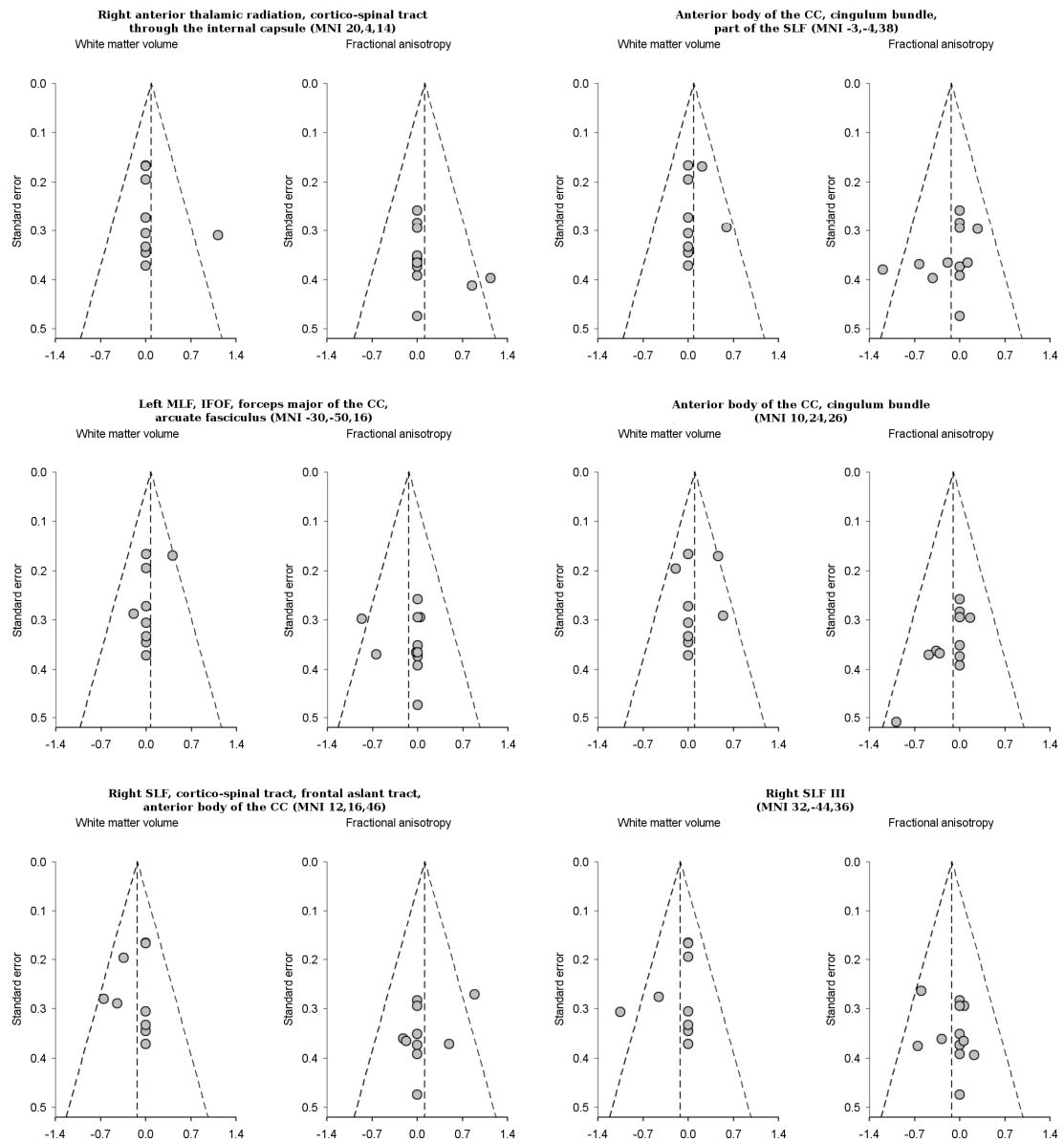
DTI	Motion and Eddy currents correction	Final resolution (mm ³)	Smoothing FWHM (mm)	Statistics	Statistical threshold
Admon <i>et al</i> 2012	DtiTool	3.0x3.0x3.0	8	Parametric	p < 0.005 cluster-corrected
Cannistraro <i>et al</i> 2001	FSL	1.0x1.0x1.0	1.5	Parametric	p < 0.05 uncorrected, 20 voxels extent and p = 0.005 for clusters' means
Fan <i>et al</i> 2012	FSL	2.0x2.0x2.0	6		p < 0.001 uncorrected, 10 voxels extent
Garibotto <i>et al</i> 2010	BrainVISA	NA	NA	Parametric	p < 0.005 uncorrected, 20 voxels extent
Gruner <i>et al</i> 2010	FSL	1.0x1.0x1.0	8	Parametric	p < 0.05 cluster-corrected
Ha <i>et al</i> 2009	FSL	2.0x2.0x2.0	6	Parametric	p < 0.001 uncorrected, 15 voxels extent
Li <i>et al</i> 2011	DtiStudio	3.0x3.0x3.0	8	Parametric	p < 0.05 FDR-corrected, 50 voxels extent
Menzies <i>et al</i> 2008	NA	NA	8	Non parametric	< 1 FP cluster
Nakamae <i>et al</i> 2008	DtiStudio	NA	8	Parametric	p < 0.001 uncorrected, 100 voxels extent
Szeszko <i>et al</i> 2005	In-house	1.0x1.0x1.0	7	Parametric	p < 0.005, 20 voxels extent
Yoo <i>et al</i> 2007	SPM	2.0x2.0x2.0	10	Parametric	p < 0.001, 20 voxels extent

eFigure 1. Inclusion of studies in the meta-analysis.



Note: The search and contact with authors retrieved a total of 34 potentially suitable studies (13 WMV and 21 DTI). Of those, two WMV (Di Paola *et al*, 2012; Huyser *et al*, 2012) and four DTI studies (Chiu *et al*, 2011; Lochner *et al*, 2012; Oh *et al*, 2011; Saito *et al*, 2008) were excluded because they employed a ROI approach, six other DTI studies were excluded because they employed TBSS (Benedetti *et al*, 2012; Bora *et al*, 2011; Fontenelle *et al*, 2011; Jayarajan *et al*, 2012; Nakamae *et al*, 2011; Zarei *et al*, 2011), and one WMV study (Lazaro *et al*, 2009) was excluded because its sample overlapped with the sample from another larger study (Lazaro *et al*, 2011). Thus, 21 studies (providing twenty-two datasets: 10 WMV and 12 DTI) completed before 31st of January 2013 could be included in the meta-analysis (Admon *et al*, 2012; Cannistraro *et al*, 2007; Carmona *et al*, 2007; Duran *et al*, 2009; Fan *et al*, 2012; Garibotto *et al*, 2010; Gruner *et al*, 2012; Ha *et al*, 2009; Koprivova *et al*, 2009; Lazaro *et al*, 2011; Li *et al*, 2011; Matsumoto *et al*, 2010; Menzies *et al*, 2008; Nakamae *et al*, 2008; Pujol *et al*, 2004; Riffkin *et al*, 2005; Szeszko *et al*, 2005; Togao *et al*, 2010; van den Heuvel *et al*, 2009; Yoo *et al*, 2007; Yoo *et al*, 2008).

eFigure 2. Funnel plots of the peaks of white matter multimodal abnormality.



Note: The horizontal axis is the effect size of the difference between patients and healthy controls.

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