

Supplementary Table 1. Multiple regression analysis of neuropsychological tests, MRS and SSEP according to AHI and SaO2 nadir in OSA patients

Parameter	Unstandardized coefficients		Standardized coefficients	t	p-value
	B	Std. error	Beta		
AHI (/h)					
PSQI	-2.695	1.514	-0.288	-1.781	0.095
BKSCA	-2.292	1.124	-0.240	-2.039	0.059
RT Frontal WM (NAA/choline ratio)	22.717	32.334	0.258	0.703	0.493
LT Frontal WM (choline/creatine ratio)	-36.204	25.503	-0.115	-1.420	0.176
LT Frontal WM (NAA/choline ratio)	-69.719	42.406	-0.164	-1.644	0.121
RT putamen (choline/creatine ratio)	283.841	141.442	0.298	2.007	0.063
RT putamen (NAA/choline ratio)	-273.581	149.648	-0.289	-1.828	0.087
LT putamen (choline/creatine ratio)	-238.417	302.799	-0.178	-0.787	0.443
LT putamen (NAA/choline ratio)	-119.066	215.175	-0.184	-0.553	0.588
RT cerebellum (choline/creatine ratio)	-386.464	277.279	-0.128	-1.394	0.184
RT cerebellum (NAA/choline ratio)	7.572	130.167	0.011	0.058	0.954
LT cerebellum (NAA/creatine ratio)	264.948	86.622	0.423	3.059	0.008*
LT cerebellum (NAA/choline ratio)	-96.688	180.279	-0.101	-0.536	0.600
N20 amplitude (mV)	-13.513	11.000	-0.153	-1.228	0.238
SaO2 nadir					
D2 Test of Attention (total-errors)	0.042	0.254	0.130	0.166	0.871
D2 Test of Attention (concentration performance)	-0.108	0.118	-0.514	-0.919	0.376
RT Frontal WM (choline/creatine ratio)	14.727	13.024	0.811	1.131	0.280
RT Frontal WM (NAA/choline ratio)	16.151	33.376	0.547	0.484	0.637
LT Frontal WM (choline/creatine ratio)	-6.721	21.269	-0.451	-0.316	0.757
LT Frontal WM (NAA/choline ratio)	-8.210	27.007	-0.339	-0.304	0.766
RT hippocampus (choline/creatine ratio)	17.764	32.278	0.111	0.550	0.592
LT hippocampus (NAA/creatine ratio)	18.138	16.854	0.559	1.076	0.303
RT parieto-occipital cortex (choline/creatine ratio)	-20.289	38.428	-0.240	-0.528	0.607
LT parieto-occipital cortex (NAA/creatine ratio)	8.483	20.921	0.203	0.405	0.692
RT putamen (NAA/choline ratio)	16.878	77.694	0.090	0.217	0.832
LT putamen (choline/creatine ratio)	342.281	204.799	0.622	1.671	0.121
RT cerebellum (NAA/choline ratio)	103.714	92.261	0.435	1.124	0.283
LT cerebellum (choline/creatine ratio)	30.750	224.418	0.103	0.137	0.893
LT cerebellum (NAA/choline ratio)	179.374	169.754	0.561	1.057	0.311
N20 amplitude (mV)	6.156	5.675	0.480	1.085	0.299
NF-kB (ng/mL)	-0.875	0.943	-0.621	-0.927	0.372

There was a positive correlation between increased AHI and risk of PSQI, BKSCA, MRS, and N20 amplitude abnormalities with the highest predictive value for MRS abnormalities (LT cerebellum [NAA/creatine ratio]) risk (beta: 0.423). There was positive correlation between decreased SaO2 nadir and risk of D2 Test of Attention, MRS, N20 amplitude, and NF-kB abnormalities with the highest predictive value for MRS abnormalities (RT Frontal WM [choline/creatine ratio]) risk (beta: 0.811).

*Significant at $p < 0.05$.

MRS, proton magnetic resonance spectroscopy; SSEP, somatosensory evoked potentials; AHI, apnea-hypopnea index; PSQI, Pittsburgh Sleep Quality Index; BKSCA, Brief Kingston Standardized Cognitive Assessment; NAA, N-acetylaspartate; OSA, obstructive sleep apnea; WM, white matter; NF- κ B, human nuclear factor-kappa B.