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Supplementary Material

Article Title: Executive Function Predicts Antidepressant Treatment Non-Completion in Late-Life Depression

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Supplementary eTable 1. One-Way ANOVA baseline executive function and non- executive measures between responders (≥50% improvement in MADRS score) and non- responders.

Cognitive task	All (n= 468)	Responders (n = 198)	Non-responders (n = 174)	Non-completers (n= 96)	Statistic *F*	*p*	Contrast 1 Non completers vs. completers (responders + non responders) *(F statistic)*	*p*	Contrast 2 Responders vs. non responders (*F* statistic)	*p*
Executive	*M (SD)*	*M (SD)*	*M (SD)*							
Set shifting[ab]	8.2 (3.6)	8.3 (3.7)	8.5 (3.6)	7.6 (3.6)	2.02	.13	3.80	0.05	0.30	0.59
Color word interference 3[a]	10.2 (3.0)	10.2 (2.8)	10.3 (3.1)	10.2 (3.2)	0.06	.94	0.07	0.79	0.06	0.81
Color word interference 4[a]	9.9 (3.6)	10.2 (3.7)	10.0 (3.3)	9.4 (3.6)	1.40	.25	2.57	0.11	0.19	0.66
Semantic fluency Scaled[c]	9.3 (3.2)	9.7 (3.3)	9.5 (3.2)	8.4 (3.1)	4.95	.008	9.53	.002	0.28	0.6
Non – executive										
Attention[e]	98.4 (17.2)	99.7 (16.6)	99.6 (17.7)	93.4 (16.8)	4.90	.008	9.79	0.002	0.00	0.96
Immediate Memory[d]	96.5 (18.2)	98.8 (17.7)	96.1 (18.0)	92.5 (19.0)	3.94	.02	5.64	0.02	2.05	0.15
Delayed Memory[e]	96.3(15.5)	97.5 (15.6)	96.2 (16.2)	94.1 (13.9)	1.47	.23	2.23	0.14	0.64	0.43
Visuospatial[e]	92.0 (17.2)	91.5 (16.9)	94.2 (17.8)	88.8 (16.3)	3.08	.05	4.14	0.04	2.17	0.14
Total score[e]	94.9 (15.8)	96.3 (15.5)	95.8 (16.9)	90.3 (13.4)	4.97	.007	9.82	0.002	0.08	0.78

Contrast analysis showed that set shifting, semantic fluency, attention, inmmediate memory, visuospatial ability and global cognition (Repeatable Battery for the Assessment of Neuropsychological Status [RBANS] total score) were associated with non-completion outcome but not with non- response.

[a]Delis Kaplan Executive Function System scaled score

[b] Calculated by subtracting the motor speed component from the number/letter switching component of the Trail Making test from the Delis Kaplan Executive Function System.

c RBANS index score normed value. This value was obtained by transforming the variable raw score to Z score and then converting to a scaled score using the following formulas: Raw score variable mean - mean from corresponding age group from the RBANS' standardization sample / standard deviation from corresponding age group from RBANS standardization sample = Z score. Then the Z scores were converted to scaled scores using the formula: 10 + 3 (Z).

[d] RBANS Index score

[e] RBANS Modified Delayed Memory Index score, Modified Visuospatial, Modified Total Index Score

Supplementary eTable 2. Differences in executive and non-executive indices among subjects with and without early side effects.[a]

Variable	Side effects *Mean (SD)* n	No side effects *Mean (SD)* n	*t* statistic	*P Value*
Executive measures				
Set shifting	8.01 (3.70) [n = 262]	8.56 (3.51) [n = 159]	-1.51	.13
Color word interference 3	10.06 (3.07) [n = 264]	10.06 (3.22) [n = 160]	-0.00	.10
Color word interference 4	9.85 (3.58) [n= 262]	9.96 (3.75) [n =160]	0.30	.77
Semantic fluency	19.32 (5.12) [n= 269]	19.57 (5.33) [n = 165]	0.49	.62
Non executive measures				
Attention	98.66 (17.01) [n=269]	98.70 (17.05) [n = 164]	0.03	.98
Delayed Memory	95.13 (15.98) [n = 269]	98.49 (15.01) [n = 164]	2.17	.03
Immediate memory	96.59 (18.19) [n =274]	97.55 (17.67) [n=172]	0.55	.58
Visuospatial	91.65 (17.40) [n = 271]	92.25 (17.21) [n= 171]	0.35	.72
Total score	94.44 (15.94) [n =265]	96.23 (15.69) [n = 164]	1.13	.26

[a] Side effects reported by subjects during in the first two weeks of treatment

Supplementary eTable 3: Differences in executive and non – executive indices among medication adherent and non- adherent subjects early in the treatment course[a].

Variable	Adherent *Mean (SD)* n	Non-adherent *Mean (SD)* n	*t* statistic	*p* Value
Executive measures				
Set Shifting	8.28 (3.64) [n = 385]	7.56 (3.54) [n = 36]	-1.14	.25
Color word interference 3	10.09 (3.14) [n = 389]	9.66 (2.97) [n = 35]	-0.79	.43
Color word interference 4	9.89 (3.63) [n= 387]	9.83 (3.76) [n =35]	-0.10	.92
Semantic fluency	19.5 (5.25) [n= 396]	18.5 (4.54) [n = 38]	-1.13	.26
Non- executive measures				
Attention	99.09 (16.96) [n=395]	94.32 (17.07) [n = 38]	-1.66	.09
Delayed Memory	96.63 (15.79) [n = 395]	94.05 (14.53) [n = 38]	-0.97	.33
Immediate memory	97.13(18.02) [n = 406]	95.15 (17.56) [n = 40]	-0.67	.51
Visuospatial	92.56 (17.14) [n = 403]	84.82 (17.76) [n= 39]	-2.69	.007
Total score	95.53 (15.86) [n =392]	90.81 (15.21) [n = 37]	-1.74	.08

[a]Early in the treatment course refers to the first two weeks of treatment.

Supplementary eTable 4: Hosmer and Lemeshow goodness -of-fit test: grouping of subjects into deciles of risk for non-completion based on their levels of predictor variables.

Group	Sample size per decile	Non completers		Completers	
		observed	expected	observed	expected
Low Risk					
1	43	0	2.35	43	40.65
2	44	5	3.33	39	40.67
3	45	6	4.01	39	40.99
4	43	4	4.48	39	38.52
5	43	5	5.21	38	37.39
High Risk					
6	46	1	6.4	45	39.6
7	43	9	7.24	34	35.76
8	45	10	9.28	35	35.72
9	44	16	11.6	28	32.4
10	37	15	17.1	22	19.9
All 10 groups	433	71	71	362	362

The Hosmer and Lemeshow goodness-of fit test indicated the model was a good fit: $\chi^2 = 13.16$ (8), $p = 0.11$.