RANDOMIZED CONTROLLED TRIAL ON THE IMPACT OF COGNITIVE TELEREHABILITATION ON COGNITION AND QUALITY OF LIFE IN GLIOMA PATIENTS

MJ. Durà, M. Molleda, P. Teixidor, C. Cáceres, A. Enseñat, M. Boldó, S. Martínez, R. Sanchez-Carrión, I. Ruiz-Almazán, C. Balañà, S. Villà

Germans Trias i Pujol Hospital
Institut Català de la Salut
INSTITUT GUTTMANN
ICO Institut Català d'Oncologia

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Introduction

Brain gliomas are the largest group of primary central nervous System tumors. Cognitive impairment is the most common problem in brain glioma patients. This deficit impacts patient's independence causing functional impairment. To improve cognition, independence on daily life activities and quality of life is a main objective in this population's treatment. There are few studies of cognitive rehabilitation interventions in brain tumor patients.

Objective is to evaluate the efficacy of neurocognitive rehabilitation, in terms of improvement of cognitive function, functionality and quality of life in brain glioma surgery patients through a tele rehabilitation program.

Methods

Clinical, unicentric, controlled, randomized, prospective and double-blind trial of patients operated between June 2012 and June 2015 at the Germans Trias hospital (Badalona

Inclusion criteria:

age between 18-70 years, histological confirmation of primary brain tumor, KPS> 60, availability of personal computer and internet connection.

Exclusion criteria:

difficulty understanding the language, severe mental disorder, dementia or neurological deficit that hinders neuropsychological assessment

Intervention group

cognitive rehabilitation Institute Guttmann

neuro personal trainer

Control group:

Usual treatment

3 /6 months post surgery

demographic, clinical-surgical data

Functional , neuropsicologycal exam

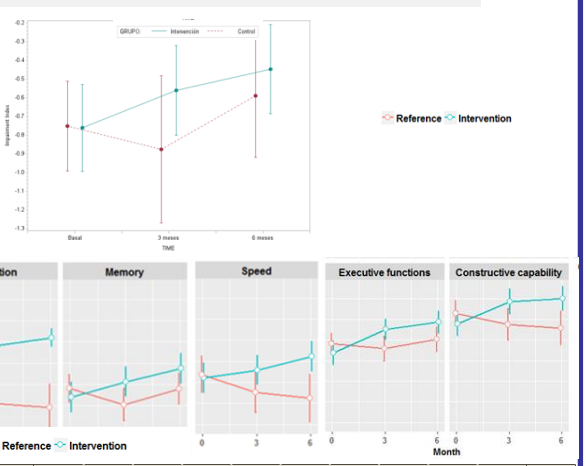
Quality of life:
EORTC-QLQ-C30
Functionality:
Functional independence measure (FIM)
Barthel index
Lawton Brodie Scale
Depression and anxiety:
Beck's depression Inventory
Spielberg State anxiety scale

Neuropsychological evaluation:
Battery for the assessment neuropsychological status(RBANS)
Subtests for:
Visual, verbal memory
Visuospatial functions
Visuoconstructive functions
Language
Attention
Stroop test
Trail-making Test

Results

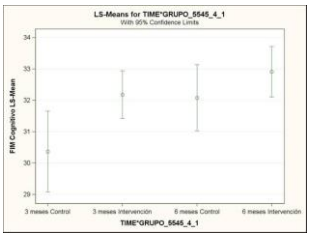
There were 84 patients randomized, 42 in each group. There were no statistically significant baseline differences between the two in terms of sociodemographic, clinical, surgical or neuropsychological variables. At 4 and 7 months the intervention group experienced a significant improvement (p = 0.017 and p = 0.027) in cognition that was not detected in the control group. A practically constant trend was detected for better results among the intervention group regarding the quality of life.

Impairment Index



	GRUPO										
	Intervenció					Control					
	N	Mean	StdDev	Min	Max	N	Mean	StdDev	Min	Max	p
IMPAIRMENT INDEX	42	-0.76	0.77	-2.37	1.29	42	-0.75	0.79	-3.01	0.64	-0.01
ATTENTION	42	-0.74	0.59	-2.13	0.22	42	-0.64	0.63	-2.44	0.49	-0.10
MEMORY	42	-1.15	1.12	-4.20	0.85	42	-1.10	1.06	-3.25	0.70	-0.05
MOTOR SPEED	42	-0.74	1.26	-4.84	1.30	42	-0.83	1.88	-10.28	1.15	0.09
METAL SPEED	42	-1.22	1.03	-3.65	1.45	42	-1.15	1.28	-4.05	1.10	-0.07
LANGUAGE	42	-0.60	1.05	-2.83	1.50	42	-0.81	1.05	-3.17	1.17	0.21
EXECUTIVE FUNCTION	42	-0.59	0.77	-2.24	1.12	42	-0.53	0.73	-2.55	0.73	-0.06
CONSTRUCTIVE CAPACITY	42	-0.30	0.96	-2.00	3.00	42	-0.21	0.94	-2.33	1.67	-0.10
CFQ_TOTAL	42	30.12	18.35	4.00	74.00	42	31.36	13.21	8.00	66.00	0.724

Cognitive Functional Independence Measure (c_FIM)



Differences of TIME*GRUPO_5545_4_1 Least Squares Means

TIME	GRUPO (Visita 1)	_TIME	GRUPO (Visita 1)	Estimate	Standar d Error	z Value	Pr > |z|	Alpha	Lower	Upper
3 meses	Control	3 meses	Intervenci	-18.080	0.6188	-2.92	0.0035	0.05	-30.209	-0.5951
6 meses	Control	6 meses	Intervenci	-0.8308	0.5868	-1.42	0.1568	0.05	-19.809	0.3194

Conclusions

Neurocognitive telerehabilitation improves cognition in brain glioma patients at four and seven months post surgery.

References

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