

Computer-based rehabilitation of spatial neglect syndrome: Considerations about a case study.

De Luca Rosaria, Spadaro Letteria, Caccamo Lory, Bramanti Placido, and Calabrò R.S..

Behavioral and Robotic Rehabilitation Laboratory, IRCCS Neurolesi Center Bonino Pulejo (Messina); Scientific Director, IRCCS Neurolesi Center Bonino Pulejo (Messina).

Background.

Post stroke right hemisphere injury patients usually exhibit a complex of neuropsychological deficits, often with a severe spatial neglect syndrome. Numerous rehabilitation interventions have been used, but the evidence of their benefit for reducing the disabling effects of neglect remains unproven.

Objective

The aim of this case report is to describe the *cognitive effects* of an emerging computer based tool (ERICA) for cognitive functions in a patient with a spatial neglect syndrome.

Materials and Methods

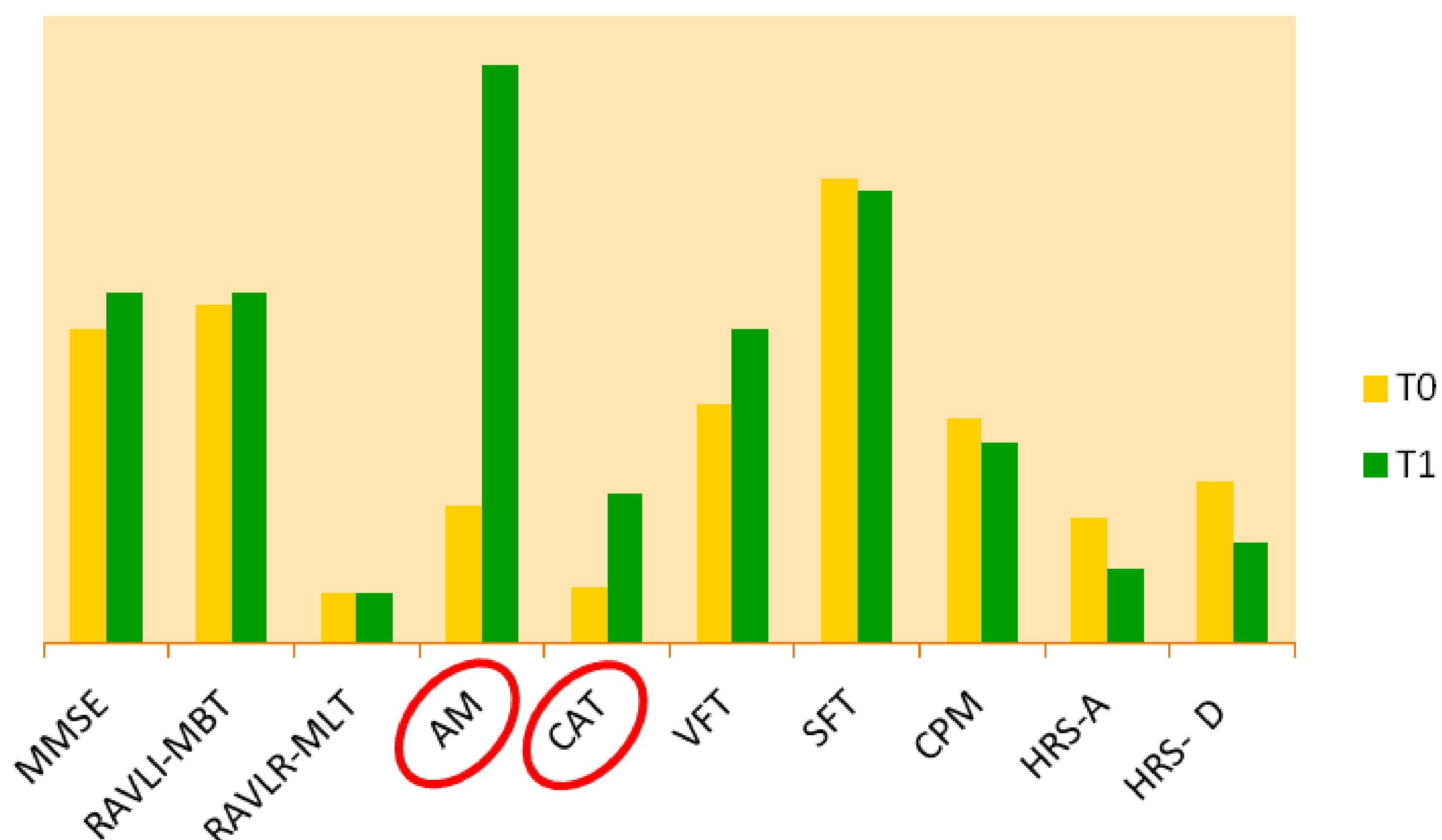
A 31-years old men, affected by post stroke severe spatial neglect syndrome, underwent a traditional cognitive rehabilitation training, but with low compliance and efficacy. Thus he underwent a specific computerized training. He was assessed by using a neuropsychological battery, including Mini Mental State Examination (MMSE), Rey Auditory Verbal Learning Immediate and Recall (RAVLI; RAVLR); Attention Matrices (AM); Constructive Apraxia Test (CAT); Color Progressive Matrices (CPM); Verbal Fluency Test (VFT) and Semantic Fluency Test (SFT) and Hamilton Rating Scale for Depression (HRS-D) and Anxiety (HRS-A), either before or after the treatment (Table1 and Grafic1). Such computerized training was administered by the use of Erica software, consisting of systematic cognitive exercises set to stimulate cognitive processes (in particular orientation, attention, memory, and executive functions), according to a "function-specific approach". The training was performed three times a week for two months.

Test	T0	T1
MMSE	25	28
RAVLI-MBT	27	28
RAVLR-MLT	4	4
AM	11	46
CAT	4,5	12
VFT	19	25
SFT	37	36
CPM	18	16
HRS-A	10	6
HRS- D	13	8

Table1 and Grafic1: Comparison of psychometric measures T0 and T1

Results

At baseline, the selective attention (AM raw score 11), sustained non spatial attention, visuo-costruttive abilities (CAT raw score 6) and memory process were severely compromised (RAVLI raw score 27 RAVLR raw score 4) with a low Quality of life. At the end of the PC-training, we observed an important improvement in selective and sustained attention (AM raw score 46), visuo-constructive abilities (CAT raw score 12) with a nearly complete remission of the spatial neglect and a betterment of the perceived quality of life.



Conclusion

The Computer-based rehabilitation may be an important tool in improving either spatial attention or cognitive skills in patient with spatial neglect syndrome

References

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