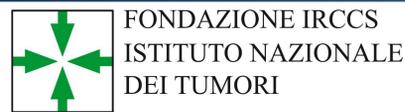


COGNITIVE DECLINE AND FUNCTIONAL STATUS IN ELDERLY LONG-TERM SURVIVORS FROM NON HODGKIN LYMPHOMA

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► Introduction and objectives

Cancer and oncological treatments have been shown to cause brain changes and to impair cognitive function in cancer survivors. Most studies have been conducted among breast cancer patients while less is known about haematological patients (1). Aim of the present study is to investigate cognitive status and functional autonomy of elderly cancer patients, long term survivors from Non Hodgkin lymphoma and to compare them with a group of age matched non cancer controls.

► Methods

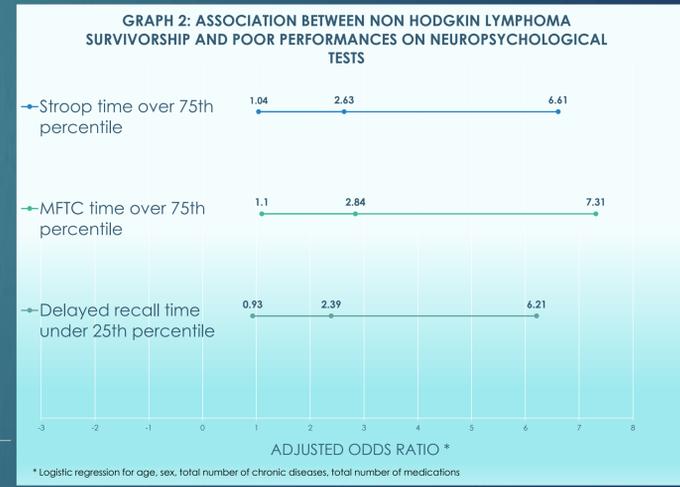
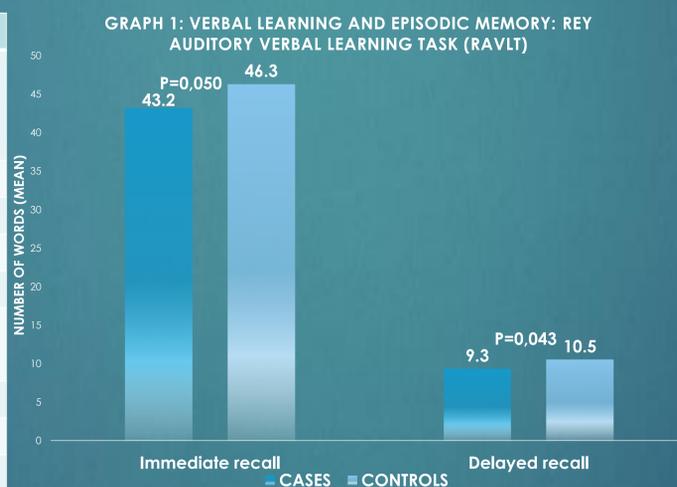
Long term (> 5 years) outpatient survivors from Non Hodgkin Lymphoma aged 65 or more and a corresponding group of non cancer controls have been enrolled at INT (Milano, IT) and Fondazione Policlinico Agostino Gemelli (Roma, IT) between October 1st 2016 and June 1st 2017. All patients were assessed at SCCU of INT and at Memory Clinic of Fondazione Policlinico Agostino Gemelli by trained staff. All study subjects were assessed with a battery of neuropsychological tests aimed at evaluating memory, praxis, attention, general intelligence, language and executive functions. Functional status has been assessed using Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) and Karnofsky Performance Status (KPS) scales. Data are presented using descriptive statistics and compared using T-test for unpaired samples with unequal variance for continuous variables and Chi squared test for categorical variables.

► Results

Global cognitive functioning, examined through Mini Mental State Examination (MMSE) wasn't significantly different between the two study groups. On neuropsychological testing, survivors showed worse performances in verbal episodic memory, (RAVLT immediate recall 43.2 Vs 46.3 p=0.050; delayed recall 9.3 Vs 10.5 p=0.043; recognition 0,9 Vs 1,0 p=0.024) (Graph 1). As already documented by previous research in cancer survivorship, the study group presented a significant impairment in executive functions (Trail Making Test B-A 47,9 Vs 32,1 p = 0.04). In particular, processing speed and conjunction search were both compromised as showed by Stroop test time and Multiple Features Target Cancellation time (MFTC) that were significantly longer in survivors even after correction for potential confounders (Graph2). No significant differences were observed in language and praxis. Functional evaluation revealed poorer performances in the survivors group, with a major effect on IADLs (p=0.004) than on ADL (p=0.016). KPS showed similar results (p=0.006). As regards polypharmacy and multimorbidity, survivors were taking a greater number of medications (3.4 ± 2.2 Vs 2.3 ± 2.0; p= 0.03) and were affected by more chronic conditions (3.4 ± 2.2 Vs 2.3 ± 2.0; p=0.003) than non cancer controls (Tab 1).

TAB. 1 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

	LYMPHOMA SURVIVORS (N= 63)	CONTROLS (N=61)	P value
Age (mean ± sd)	74.2 ± 12.8	74.3 ± 5.4	0.250
Sex (F) (%)	58.7	41.2	0.166
Education (mean)	10.8 ± 4.0	11.2 ± 3.9	0.420
Activities of Daily Living (ADL)	5.5 ± 0.9	5.8 ± 0.4	0.016
Instrumental Activities of Daily Living (IADL)	7.0 ± 1.9	7.8 ± 0.6	0.004
Karnofsky Performance Status (KPS)	95.83 ± 7.20	98.69 ± 9.40	0.006
Total number of chronic diseases	3.0 ± 1.9	2.1 ± 1.4	0.002
Total number of drugs	3.4 ± 2.2	2.3 ± 2.0	0.003



► Conclusions

Similarly to previous evidences collected in other groups of cancer survivors, we observed poorer cognitive performances in lymphoma survivors compared to non cancer controls with a greater involvement of verbal episodic memory and executive functions. The impairment in ADLs, IADLs and KPS is remarkable because it can be of critical importance for functional autonomy in elderly patients. Such patients are at higher risk for fragility and need, therefore, a careful follow-up and should be taken in charge by a geriatrician when cognitive or functional impairment is suspected.

BIBLIOGRAPHY

1) Williams AM, Zent CS, Janelins MC. What is known and unknown about chemotherapy-related cognitive impairment in patients with haematological malignancies and areas of needed research. British journal of haematology. 2016;174(6):835-846. doi:10.1111/bjh.14211.