

CRASH score in the Older French patients with Non Hodgkin Lymphoma receiving chemotherapy, first results

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Background

- The incidence of Non Hodgkin Lymphoma (NHL) in patients older than 70 years is increasing during the last decade.
- Geriatric assessment objectives that older adults with NHL vary considerably in terms of performance status, comorbidities and functional reserve.
- Comprehensive geriatric assessment is the best way to identify the functional risks and disabilities of older patients with the aim of providing care and organizing long-term follow-up.
- In some cancers M. Extermann identifies by the CRASH score the individual risk of severe toxicity from chemotherapy (1).
- At the annual meeting SIOG 2013, we presented a feasibility study. The results of this retrospective study were interesting, so it was decided to carry out this work by a prospective study.
- The objectif of this study 2014 was to establish the predictive value and the interest of the CRASH score in a prospective non selective French population with NHL.

Methods

- We performed a prospective multicentric study on consecutive NHL patients treated by chemotherapy from august 2013 to september 2014 conducted in the regional network HEMATOLIM.
- Inclusion criteria
 - 70 years old and over
 - Histologically proved B NHL according to the guidelines of the WHO
 - Geriatric assessment according to the SIOG recommendations for CGA
- Available clinical and biological data
- CRASH score, Non Hematologic Risk Factor (NHRF) and Hematologic Risk Factor (HRF) are evaluated before chemotherapy.
- CRASH points for toxicity of chemotherapy (CT) regimen were established using the chemotox table values, regimens not listed were scored by analogy (1).
- Adverse events, grade 3 and over, up to 1 month after chemotherapy are described according to the NCI-CTC version 3.0 toxicity table as defined by the National Cancer Institute Common Terminology Criteria for Adverse Events or geriatrics health problems (2).

Toxicity results

- Severe toxicity after treatment grade 3 and over has been observed in 14/52 patients (26.9%)
 - 1 to 9 events per patient
 - Time of assessment

Adverse events	n	%	Age			
			70-79	80-89	≥90	
Hospitalization	8	15.4	3	5	0	
Hospitalization in emergency department	5	9.6	1	4	0	
Infection	3	5.7	2	1	0	
Severe anemia	2	3.8	2	0	0	
Severe neutropenia	8	15.4	6	2	0	
Platelets <50000	5	9.6	3	2	0	
AST(SGOT) or ALT(SGPT) x5	0	0	0	0	0	
Creatinine x5	0	0	0	0	0	
Fever	4	7.7	2	2	0	
Asthenia	8	15.4	3	5	0	
Fall	1	1.9	1	0	0	
Confusion	0	0	0	0	0	
Diarrhea	0	0	0	0	0	
Loss of appetite	4	7.7	2	2	0	
Weight loss	1	1.9	1	0	0	
Total of adverse events	49		26	23	0	

CS and adverse events CS and no adverse event



Patients characteristics

- Included patients n=54
- Evaluable patients: n=52/54
- Exclusions for missing data: n=2

Characteristics	Value	%
Sex ratio Male Female	0.86 24 28	46.2 53.8
Median age	79 [70 - 91]	
Age 70-79 80-89 ≥ 90	27 24 1	51.9 46.2 1.9
Histological subtypes DLBCL Follicular Mantle Others	19 12 6 15	36.5 23.2 11.5 28.8
Total	52	100

CRASH Score

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CRASH Score	n	%	Age			
			70-79	80-89	\geq 90	
High	9	17.3	4	5	0	
Med-High	20	38.5	10	10	0	
Med-Low	18	34.6	10	7	1	
Low	5	9,6	3	2	0	
NHRF						
High	6	11.6	3	3	0	
Med-High	19	36.5	9	10	0	
Med-Low	17	32.7	7	9	1	
Low	10	19.2	8	2	0	
HRF						
High	5	9.6	3	2	0	
Med-High	26	50	14	12	0	
Med-Low	17	32.7	8	8	1	
Low	4	7.7	2	2	0	
Total	52	100	27	24	1	
Low Total	4 52	7.7 100	2 27	2 24	0 1	





CS, NHRF, HRF: distribution by age group



Anthracycline based CT: 34.6 % (n=18)

- Non anthracycline based CT: 65.4 % (n=34)
- Rituximab: 15.4% (n=48)

■ Intravenous regimen: 98.1% (n=51)

Regimens	n	%	Age		
			70-79	80-89	\geq 90
Anthracycline based CT	18	34.6	12	6	0
Alkylant agent based CT	10	19.2	5	4	1
Aracytine based CT	8	15.4	4	4	0
Bendamustine	4	7.7	2	2	0
VP16-Holoxan	8	15,4	2	6	0
Others	4	7.7	2	2	0
Total	52	100	27	24	1

Discussion

- Patients with CRASH score Low or Med-Low, n=23 (44.2%), have no advserse event.
- Among the patients with CRASH Score High or Med-High, n=29 (55.8%), 48.3% (n=14) have adverse events.
- Patients with a High or Med High CRASH score are at risk and need a close monitoring. We consider that they have 50% of risk to have severe adverse effects associated with the chemotherapy.
- We decided to establish a specific monitoring for these patients at high risk:
 - A close phone follow-up by the nurse case manager.
 - From the beginning of the treatment, we inform the medical team:
 - The familly physian, about hospitalization if necessary
 - Hospitals (refferal hospital or peripheral hospitals) and hematology or geriatrics departments

Conclusion

- These results are interesting but the small size of cases does'nt allow statistical analysis.
- Inclusions will continue for about one year, with an objective of at least one hundred of patients.
- We believe that the geriatric support of our older patients with Non Hodgkin Lymphoma must combine multiple items from the initial diagnosis:
 - Concerning the fragility of the patient: abbreviated geriatric assessment via our GERh7 tool with or not a comprehensive geriatric assessment.
 - Regarding the chemotoxicity: assessment of the CRASH score.
 - We can then identify at best, the real health status of our patients, the potential risks and offer them a personalized and adapted clinical pathway and treatment.

(1) Predicting the risk of chemotherapy toxicity in older patients: The Chemotherapy Risk Assessment Scale for High-Age Patients (CRASH) score. Cancer 2012, M. Externann, Y Boler, R. R. Reich, G. H. Lyman, J. DeFelice, R. M. Levine, E. T. Lubiner, F. J. Schreiber, L. Balduci. (2) Cancer Therapy Evaluation Program, Common Terminology Criteria for Adverse Events, Version 3.0, DCTD, NCI, NIH, DHHS, March 31, 2003 (http://clep.cancer.gov), Publish Date: August 9, 2006

