



Characteristics and Patterns of Care of Patients ≥ 70 Years of Age with T-Cell non-Hodgkin Lymphoma in the United States

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Background: Age-related differences in patients with T-cell non-Hodgkin lymphoma are not well-described. We compared patients ≥ 70 years to their younger counterparts using data from the COMPLETE Registry. A similar analysis was undertaken by the T-Cell Project.

Methods: COMPLETE is a prospective US registry of T-cell non-Hodgkin lymphoma patients designed to collect patient characteristics, treatments, and outcomes. We divided patients into three age categories (≤ 60 , >60 - <70 , and ≥ 70 years). Descriptive statistics (chi-square, t-test) were used for comparisons. Log rank test and Cox regression models were used for overall survival.

Results: From 2010-2014, 499 patients were enrolled from 55 US sites. Data on disease/clinical characteristics were available for 395 patients (≤ 60 : n=207, >60 - <70 : n=88, ≥ 70 : n=100), while treatment data were available on 363 patients. Registry median follow-up is 1.9 years. Baseline characteristics are shown in **Table 1**. Patients ≥ 70 years were more likely to have underlying liver and cardiac disease, ALK-ALCL and skin involvement. Younger patients were more likely to have elevated LDH and EBV-associated disease. Treatment characteristics are shown in **Table 2**. Patients ≥ 70 years were less likely to receive curative-intent therapy and more likely to receive local radiotherapy or best supportive care alone. Younger patients were more likely to undergo high-dose therapy (HDT) as consolidation. There was a trend showing differences in chemotherapy selection by age. Median survival was 45.3, 41.9 and 26.4 months for patients ≤ 60 , >60 - <70 , and ≥ 70 years, respectively. Cox modeling suggests stage III/IV disease as predictor of inferior overall survival (HR 3.4; 95% CI: 1.91-6.20, $P < 0.0001$) and HDT consolidation as a predictor of better overall survival (HR 0.19, 95% CI: 0.09-0.42, $P < 0.0001$).

Conclusion: T-cell non-Hodgkin lymphoma patients aged ≥ 70 years in the US are more likely to receive non-curative intent therapy while younger patients are more likely to receive HDT. HDT therapy was an independent predictor of better overall survival. The overall poor outcomes strongly support the need for better treatment options.

Table 1: Baseline Characteristics

Characteristic	≤ 60 n=207	>60 - <70 n=88	≥ 70 n=100	p Value
Gender				0.81
Female	81 (39%)	31 (35%)	37 (37%)	
Male	126 (61%)	57 (65%)	63 (63%)	
Histology				0.002
PTCL- not otherwise specified	59 (29%)	35 (40%)	38 (38%)	
Anaplastic large cell lymphoma	43 (21%)	12 (14%)	13 (13%)	
T/NK-cell lymphoma, nasal type	29 (14%)	8 (9%)	5 (5%)	
Angioimmunoblastic	20 (10%)	22 (25%)	20 (20%)	
Subcutaneous panniculitis	12 (6%)	0 (0%)	1 (1%)	
Hepatosplenic T-cell lymphoma	10 (5%)	2 (2%)	0 (0%)	
Other	34 (16%)	9 (10%)	23 (23%)	
Anaplastic large cell lymphoma				0.05
ALK-	24 (56%)	8 (67%)	12 (92%)	
ALK+	19 (44%)	4 (33%)	1 (8%)	
B symptoms (yes)	108 (52%)	37 (42%)	43 (43%)	0.16
Ann Arbor stage	n=206	n=88	n=99	0.55
I/II	58 (28%)	24 (27%)	33 (33%)	
III/IV	148 (72%)	64 (73%)	66 (67%)	
Comorbidities				
Liver disease	1 (<1%)	0 (0%)	4 (4%)	0.02
Cardiac disease	18 (9%)	12 (14%)	34 (34%)	<0.0001
LDH elevated*	106 (52%)	36 (42%)	31 (33%)	0.007
Sites of disease				
Nodal	124 (60%)	58 (66%)	58 (58%)	0.51
Extranodal	128 (62%)	49 (56%)	58 (58%)	0.58
Skin	36 (28%)	15 (31%)	27 (47%)	0.04
EBV-associated disease	25 (45%)	8 (33%)	6 (30%)	0.05

*LDH value is missing for 4 patients.

Table 2: Treatment Characteristics

Characteristic	≤ 60 n=190	>60 - <70 n=79	≥ 70 n=94	p Value
Primary intent of therapy	n=190	n=78	n=94	<0.0001
Cure	178 (94%)	69 (89%)	65 (69%)	
Palliation	12 (6%)	9 (12%)	29 (31%)	
First-line treatment approach	n=189	n=78	n=94	
Induction chemotherapy (ICT) alone	109 (58%)	45 (58%)	60 (64%)	0.58
ICT + HDT consolidation	44 (23%)	17 (22%)	3 (3%)	<0.0001
ICT + CT consolidation	12 (6%)	6 (8%)	7 (7%)	0.90
Local radiotherapy alone	2 (1%)	1 (1%)	8 (9%)	0.002
Observation/best supportive care	4 (2%)	3 (4%)	9 (10%)	0.02
Other	18 (9%)	6 (8%)	7 (7%)	
Chemotherapy regimens	n=182	n=76	n=75	0.08
CHOP/CHOP-like	47 (26%)	26 (34%)	25 (33%)	
CHOEP/CHOEP-like	36 (20%)	13 (17%)	10 (13%)	
Gemcitabine-based	7 (4%)	1 (1%)	6 (8%)	
Platinum-based	10 (6%)	2 (3%)	1 (1%)	
Ifosfamide-based	14 (8%)	3 (4%)	0 (0%)	
Other	68 (37%)	31 (41%)	33 (44%)	

CHOP = cyclophosphamide, doxorubicin, vincristine, prednisone
CHOEP = etoposide, prednisone, vincristine, cyclophosphamide, doxorubicin



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