

The Interim Results of the Significance of Upfront High-Dose Chemotherapy with Autologous Hematopoietic Stem Cell Transplantation for IV Stage and High-Intermediate/High Risk Groups of Diffuse Large B-Cell Lymphoma with Complete Response after Induction Chemotherapy

A.K. Koviazin¹, L.V. Filatova¹, I.S. Zyuzgin¹, A.S. Artemyeva², M.S. Motalkina¹, Yu. A. Chudinovskikh¹, S.A. Volchenkov¹, I.L. Poliatskin², E.V. Cherkasova¹, S.A. Shalaev¹, I.V. Ishmatova¹, A.A. Zverkova¹, M.I. Ghanzin¹, D.S. Burda², T.Yu. Semiglazova³.

Context

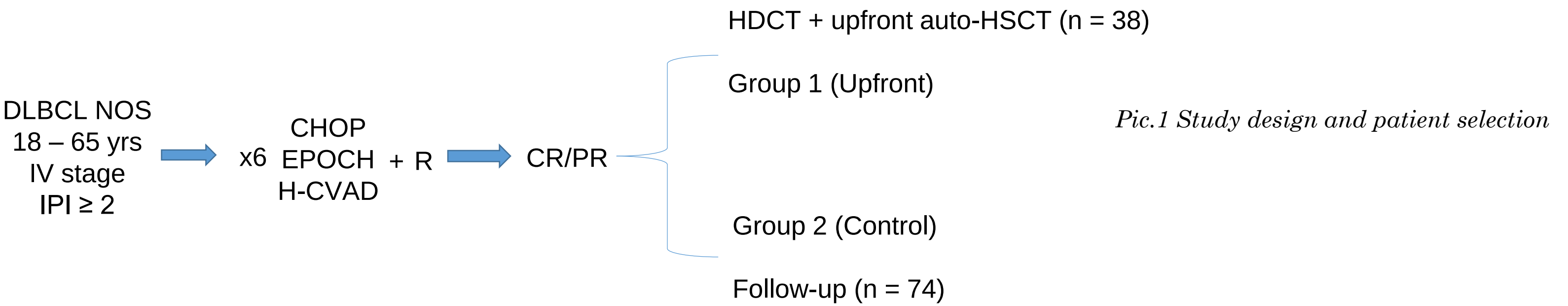
Approximately 30% of patients (pts) with IPI≥2 diffuse large B-cell lymphoma (DLBCL) have relapsed after the frontline regimens. High-dose chemotherapy (HDCT) with autologous hematopoietic stem cell transplantation (auto-HSCT) in the first remission can be an effective option to decrease the relapse rate in these patients.

Objective

To determine the significance of the upfront HDCT with auto-HSCT for IV stage DLBCL pts with unfavorable prognosis and complete response (CR) after induction.

Design and Interventions

Patients (pts) treated from 01.01.2010 to 31.12.2019 at NMRC of Oncology named after N.N.Petrov of MoH of Russia were retrospectively analyzed.



Tab.1 Characteristics of included patients

	Group 1 (Upfront), n = 38		Group 2 (Control), n = 74	
Characteristic	n	%	n	%
Men	21	55,2	35	50
LDH ≥ 220 U/l	32	84	57	81.4
Extranodal ≥ 1 site	30	78.9	53	75.1
Bone marrow involvement	7	18.4	18	25.7
Ki67 ≥ 80%	30	78.9	46	65.7
DEL	15/32	46.8	13/46	28.2
Non-GCB subtype	22	57.9	27	38.6
Bulky (Ldi ≥ 7.5 sm)	23	60.5	25	35.7
IPI ≥ 3	27	71	44	62.8
Median age, yrs	47.1 (18 – 63)		48.7 (22 – 64)	
Median observation time, mon	47.3 (6 – 82)		53.4 (3 – 130)	

Results

	Group 1 (Upfront), n = 38				Group 2 (Control), n = 74	
	After Induction		After upfront HDCT with auto-HSCT			
Response	n	%	n	%	n	%
CR	23	61	37	97	59	80
PR	17	29	0	0	15	20

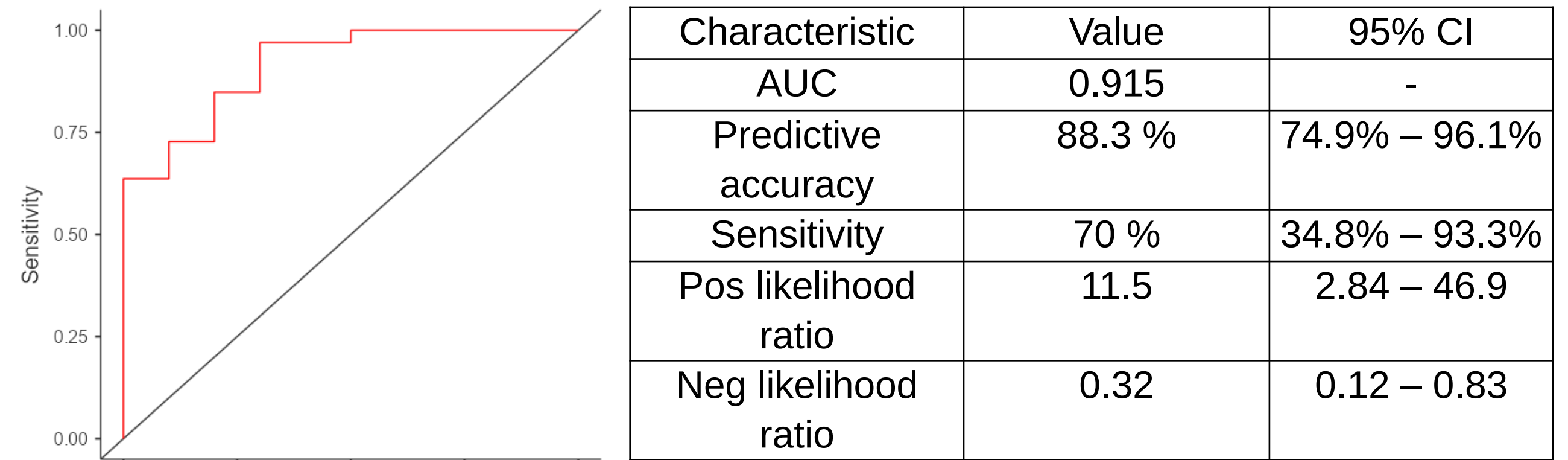
Tab.2 Response rates

	Group 1 (Upfront), n = 38		Group 2 (Control), n = 74	
Relapse	n	%	n	%
Early relapse	2	6	14	20
Late relapse	2	6	4	6

Tab.3 Relapse rates

	Group 1 (Upfront) n CR1 = 37		Group 2 (Control) n CR1 = 59		p-value (Fisher's)
Characteristic	n	%	n	%	
C-myc≥40%	1/14	7.1	6/13	46.1	0.007
Extra lung + any	0/8	0	5/10	50	0.0359
DEL	1/16	6.2	5/8	62.5	0.0069

Tab.4 Two-year relapse rates in CR1 pts



Tab.5 Characteristics of BLR model for CR1

Outcome measures

Complete response (CR), 2-yr relapse rate (RR), 2-yr progression-free survival (PFS).

BLR model for CR1 - Variables

Model Coefficients - PFS24 – All CR1							
Predictor Presence(1) – Absence(0)	Estimate	SE	Z	p	Odds ratio	95% Confidence Interval	
						Lower	Upper
Intercept	-2.5252	4.2188	-0.599	0.549	0.0800	2.05e-5	312.165
Modality:							
Front (n = 23) Control (n = 60)	2.6596	1.3341	1.994	0.046	14.2901	1.046	195.261
CD3(+)/TILs≥20%:							
1 (n = 27) 0 (n = 38)	4.3479	1.8920	2.298	0.022	77.3191	1.896	3153.246
Extra>1:							
1 (n = 59) 0 (n = 24)	-3.8896	1.9592	-1.985	0.047	0.0205	4.40e-4	0.951
DEL:							
1 (n = 21) 0 (n = 41)	-3.6516	1.8162	-2.011	0.044	0.0260	7.38e-4	0.912
Bsym:							
1 (n = 40) 0 (n = 43)	2.4681	1.7526	1.408	0.159	11.8002	0.380	366.165
PLT≥320x10⁹/l:							
1 (n = 44) 0 (n = 39)	3.2451	1.9071	1.702	0.089	25.6649	0.611	1078.120
Ki67 (covariate)	0.0424	0.0478	0.887	0.375	1.0433	0.950	1.146

Note. Estimates represent the log odds of "PFS24 = 1" vs. "PFS24 = 0"

Conclusions

CR rate significantly increased in DLBCL NOS pts with stage IV, IPI ≥2 treated by upfront HDCT with auto-HSCT.

Two-year RR was significantly higher if DLBCL NOS pts with stage IV, IPI≥2 had extra>1 site with lung involvement or c-myc≥40% or DEL and didn't proceed to upfront HDCT with auto-HSCT.

Upfront HDCT with auto-HSCT and CD3(+) TILs≥20% were favorable for 2-yr PFS. Extra>1 and DEL were unfavorable for 2-yr PFS.

¹Department of Hematology and Chemotherapy with intensive care unit, ²Department of Pathology, ³Department of Innovative Methods in Therapeutic Oncology and Rehabilitation, NMRC of Oncology named after N.N.Petrov of MoH of Russia, Saint-Petersburg, Russian Federation