Spleen involvement identified on baseline PET imaging influences outcome of young patients with high risk diffuse large B cell lymphoma treated with R-CHOP14 but not R-ACVBP

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OBJECTIVES

Extranodal involvement is considered a poor prognostic factor in patients (pts) with DLBCL. However pts with a spleen involvement (SI) identified on the baseline CT were not found to have a worse outcome in the rituximab era (Takahashi Cancer, 2012; 118: 4166). Due to its better sensitivity to identify extranodal sites PET may improve SI detection in DLBCL pts. Thus we explored the adding value of PET to detect the SI and its prognosis impact in pts prospectively enrolled in a phase II randomized trial testing 2 R-chemo regimens and a PET-driven consolidation strategy (NCT00498043).

Figure 1: LNH 07-3B LYSA trial

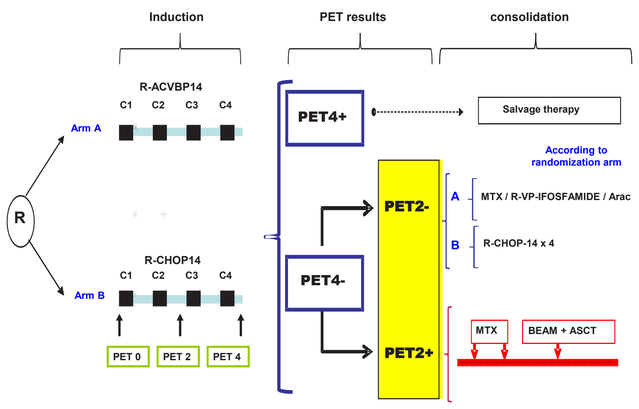


Table 1: Patients characteristics according to SI

		Splenic PET results PET- (S/L=<1.5) N=112		PET+ (S/L>1.5) N=49		p
Age (years)	Median (range)	46 (18 - 59)		46 (20 -59)		NS
Gender	Male	56	(50%)	35	(71%)	**0.015**
	Female	56	(50%)	14	(29%)	
ECOG	0-1	89	(75%)	33	(67%)	NS
	2+	23	(25%)	16	(33%)	
Ann Arbor Stage	II	4	(4%)	0	(0%)	NS
	III	17	(15%)	7	(14%)	
	IV	91	(81%)	42	(86%)	
B Symptoms		47	(42%)	36	(74%)	**<0.0003**
Mass > 10 cm		35	(31%)	8	(16%)	NS
Nb of Extra-nodal sites	Median	2 (0 - 8)		3 (1 - 8)		NS
Spleen size (cm)	Median	102 (87 - 117)		144 (114 - 180)		
	>115	33	(30%)	35	(71%)	**0.000002**
Nb of Peripheral Lymph Nodes	Median	1 (0 - 8)		2 (0 - 8)		NS
LDH	>Normal	198	(96%)	46	(94%)	NS
Age adjusted IPI	1	3	(3%)	1	(2%)	NS
	2	91	(81%)	34	(69%)	
	3	18	(16%)	14	(29%)	
Randomized arm	R-ACVBP 14	57	(51%)	25	(51%)	NS
	R-CHOP 14	55	(49%)	24	(49%)	

METHODS

- Eligible pts for the present study had to be enrolled in the LNH07-3B trial and to have a baseline PET available for central review and SI evaluation.
- All pts were 18-59 y, with a previously untreated aaIPI 2-3 DLBCL and were randomly assigned to 4 cycles of either R-ACVBP14 or R-CHOP14 induction.
- Consolidation treatment was driven by centrally reviewed interim PET assessment during induction treatment as previously published (Casasnovas et al, Blood 2011, 118: 37) (figure 1).
- Spleen was considered focally involved in case of hypermetabolic nodule, or diffusely involved when the SUVmax of spleen was higher than 150% of the liver SUVmax (S/L>1.5).

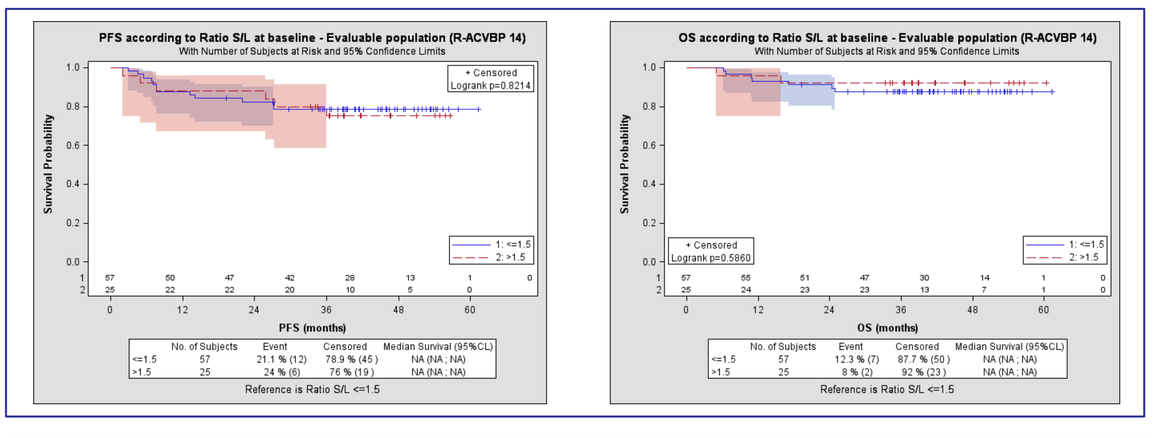
RESULTS

- 161 pts with a median age of 46y were included: 97% had stage III/IV, 27% a bulky mass >10cm, 96% elevated LDH, 26% ECOG≥2.
- A SI was found in 49 pts (30%) including 24 pts (49%) with a focal involvement
- SI was not related to tumor bulk, Ann Arbor stage, elevated LDH or treatment arm, but was more frequently associated to B symptoms (74% vs 42%, p<0.003) and enlarged spleen size (>115 cm) (30% vs 71%, p= 0.000002).
- In the whole cohort with a 45 months median follow-up, pts with a SI had a shorter 4y-PFS (67% vs 81%, p=0.05) but a similar OS compared with no SI pts.
- The poor prognosis related to the SI was only observed in the R-CHOP arm (4y-PFS: 58% vs 84%, p<0.02 and 4y-OS: 71% vs 86%, p=0.05, respectively) but not in the R-ACVBP arm (figure 2).

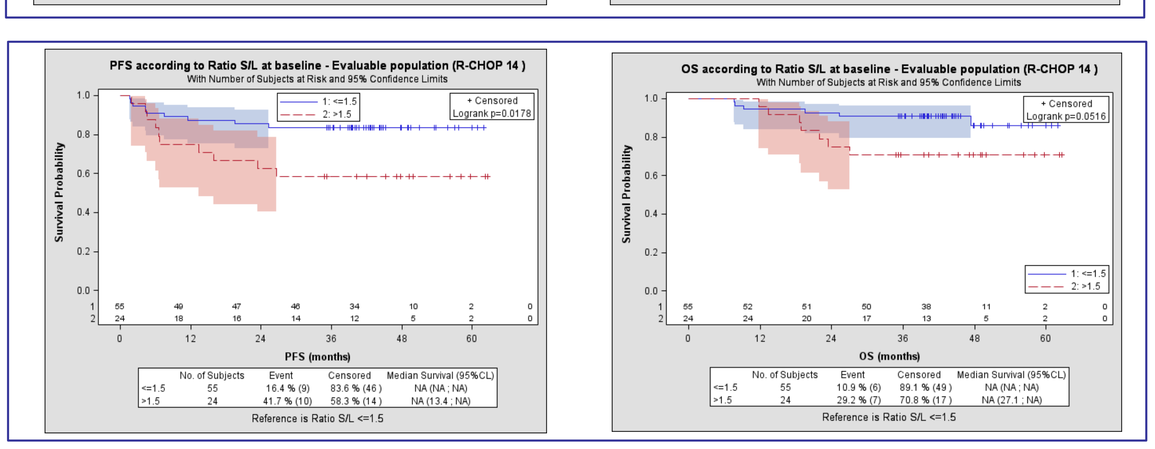
Figure 2:
Impact of SI on pts outcome according to treatment arm

PFS **OS**

R-ACVBP arm



R-CHOP arm



CONCLUSIONS

Spleen involvement identified on the basis of baseline PET allows to recognize among young high risk DLBCL patients treated with R-CHOP14 those with high risk of treatment failure. R-ACVBP overwhelms the prognosis impact of spleen involvement.

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