The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

627.AGGRESSIVE LYMPHOMAS: CLINICAL AND EPIDEMIOLOGICAL

Using Deauville Scoring to Guide Consolidative Radiotherapy in Diffuse Large B-Cell Lymphoma

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Introduction

Diffuse large B-cell lymphoma (DLBCL) is the most common aggressive lymphoma in adults. Although consolidative radiotherapy (RT) is often administered in DLBCL, guidelines concerning its usage remain unclear. International guidelines recommend using positron emission tomography (PET) with ^{18}F-fluorodeoxyglucose to stage and assess remission in DLBCL patients. We aimed to assess the value of end-of-treatment PET scans, interpreted using the Deauville score (DV), in guiding the utilization of consolidative RT. This approach may help spare low-risk DLBCL patients from unnecessary RT.

Methods

All DLBCL patients diagnosed from 2010-2022 at National Cancer Centre Singapore with DV measured at the end of first line chemotherapy were included. DV 1-3 patients were classified as low-DV risk and DV 4-5 patients as high-DV risk. Primary endpoint was time-to-progression (TTP), defined as the time from diagnosis to progression or relapse of DLBCL, or death due to DLBCL or treatment-related factors. Patients without these events were censored at their last follow-up. Cox proportional hazards regression was used to assess the association of TTP with various covariates. The predictive value of DV risk group was analyzed by including an interaction term between receipt of RT and DV risk group in the Cox model. Effect estimates were summarized using hazard ratios (HRs) and 95%-confidence intervals (95%CI).

Results

A total of 349 patients were analyzed, of which 80 were treated with RT (RT-treated) and 269 without RT (RT-omitted). The mean age of the whole cohort was 59.8 years (standard deviation 15.9 years). Compared with RT-omitted patients, there were higher percentages of RT-treated patients with stage 1-2 disease (61% vs 43%, p=0.007), elevated lactate dehydrogenase (85% vs 71%, p=0.039) and bulky disease (25% vs 10%, p=0.003). On average, RT-treated patients also had lower baseline hemoglobin levels compared to RT-omitted patients (11.7 g/dL vs 12.2 g/dL, p=0.038). The median follow-up time was 38.1 months (interquartile range 34.0-42.3 months). As a higher proportion of RT-treated patients was diagnosed later than RT-omitted patients, median follow-up times were significantly different between the two groups (RT-treated: 25.4 months vs RT-omitted: 42.3 months, p<0.001).

TTP was comparable between RT-treated and RT-omitted patients (HR 0.81; 95%CI 0.45-1.48; p=0.492) (Table 1). When subgrouped by DV risk group, RT was associated with a significant improvement in TTP amongst the high-DV risk patients (HR 0.33; 95%CI 0.13-0.88; p=0.027), but not the low-DV risk patients (HR 0.85; 95%CI 0.40-1.81; p=0.670; interaction's p=0.133) (Figure 1). This subgroup analysis result remained the same after adjusting for International Prognostic Index, presence of B symptoms, bone marrow involvement and hemoglobin levels on multivariable analysis (high-DV risk: adjusted HR 0.29; 95%CI 0.11-0.80; p=0.017 vs low-DV risk: HR 0.86; 95%CI 0.40-1.86; p=0.707; interaction's p=0.087). To examine the impact of the different follow-up durations between the RT-treated and RT-omitted patients on the subgroup analysis, we performed a sensitivity analysis censoring TTP at 24 months. In this sensitivity analysis, RT was again associated with a significant improvement in TTP amongst the high-DV risk patients (adjusted HR 0.29; 95%CI 0.10-0.82; p=0.019), but not those with low-DV risk (adjusted HR 0.70; 95%CI 0.27-1.86; p=0.477; interaction's p=0.217).

Conclusion

Our study suggests that DLBCL patients who received first line chemotherapy with end-of-treatment PET-CT DV 1-3 may not require consolidative RT. This observation will need longer follow-up duration to ascertain the use of DV as a potential marker to guide patient selection for consolidative RT. We will continue to follow these patients up for overall survival.

Disclosures No relevant conflicts of interest to declare.

Table 1: Cox regression analyses of time-to-progression by RT and DV risk groups

	Unadjusted model			Multivariable-adjusted model^		
	HR (95% CI)	P	P(Int*)	HR (95% CI)	P	P(Int*)
TTP (78 events)						
Overall: RT vs no RT	0.81 (0.45, 1.48)	0.492	-	0.80 (0.44, 1.47)	0.466	-
High DV: RT vs no RT	0.33 (0.13, 0.88)	0.027	0.133	0.29 (0.11, 0.80)	0.017	0.087
Low DV: RT vs no RT	0.85 (0.40, 1.81)	0.670		0.86 (0.40, 1.86)	0.707	
TTP censored at 2 years (54 events)						
Overall: RT vs no RT	0.75 (0.38, 1.49)	0.392	-	0.70 (0.35, 1.41)	0.304	-
High DV: RT vs no RT	0.35 (0.13, 0.94)	0.037	0.285	0.29 (0.10, 0.82)	0.019	0.217
Low DV: RT vs no RT	0.75 (0.29, 1.96)	0.553		0.70 (0.27, 1.86)	0.477	

^Adjusted for International Prognostic Index, presence of B symptoms, bone marrow involvement and hemoglobin levels

*Interaction term between RT and DV risk groups

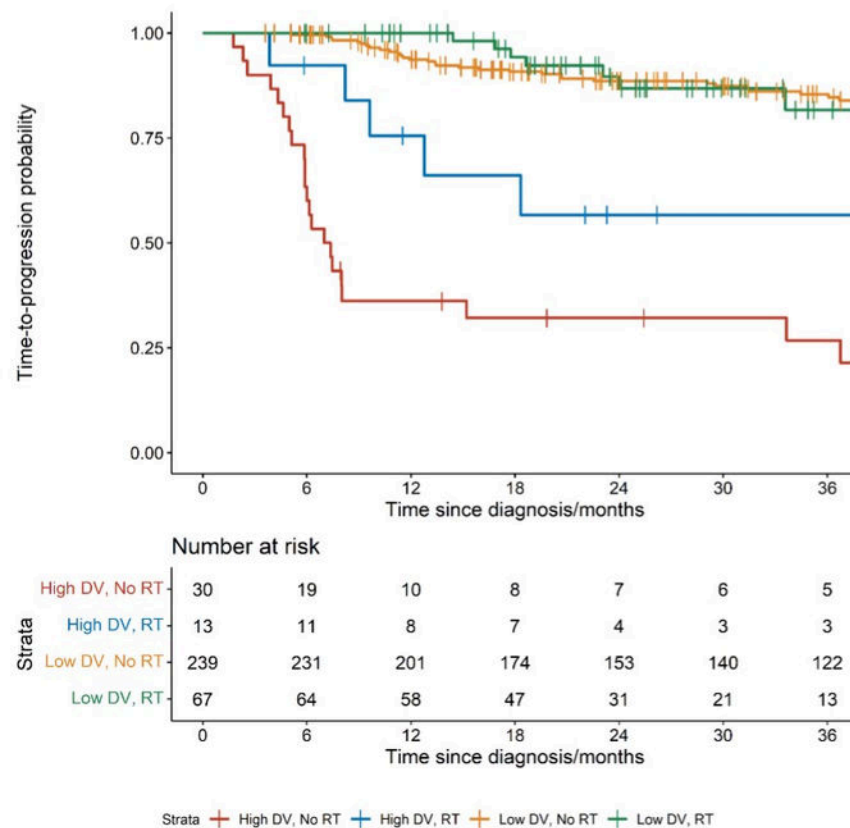### Figure 1: Kaplan-Meier curves of time-to-progression by RT and DV risk groups

Figure 1

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