17p (tp53) deletion determines worse survival in diffuse large b-cell lymphoma patients after first-line treatment with immunochemotherapy: a retrospective study of 151 patients

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INTRODUCTION

BCL2, BCL6, and *MYC* ***rearrangements*** evaluated by fluorescence in-situ hybridization (FISH) have gained **relevance in recent years in DLBCL**.

Information is lacking on the prognostic value of *del(17p)* evaluated by FISH, which has only been analyzed in a short series of patients or with heterogeneous treatments.

AIM

To determine the **prognostic value of *del(17p).***

METHOD

DESIGN:

Multicenter, retrospective, observational study from 2014 to 2021.

PATIENTS:

We collected data from **151 patients** diagnosed with **DLBCL** not otherwise specified who received **first-line treatment based on immunochemotherapy** and with information at diagnosis of ***BCL2, MYC, and BCL6 rearrangements*, as well as del(17p), by *FISH.***

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RESULTS

The **characteristics of the sample** are summarized in table 1.

Half of the patients (51%) presented at least one rearrangement. *Del(17p)* was detected in 24 patients (16%).

The median follow-up of living patients was 26 months.

In the **univariate analysis** of rearrangements (presence of rearrangement vs. no rearrangement), rearrangements in *BCL2* (47% vs. 79%, P<0.01), *MYC* (32% vs. 71%, P<0.01), or *del(17p)* (58% vs. 77%, P<0.05) were associated with worse 2-year progression-free survival (PFS-2y).

When all rearrangements were considered together, ***del(17p)* was found to have reduced PFS-2y (64%) compared to cases without rearrangements or with *BCL6* (82%) (Figure1).**

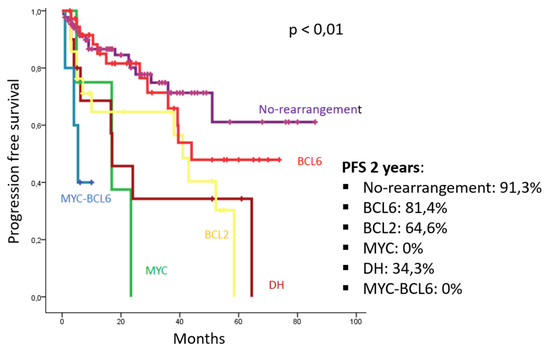
In the **multivariate analysis** .**IPI >2, *BCL2*** translocation, and DH were independently associated with lower PFS-2y (Table 2)

***Del(17p)* was independently and statistically significantly associated with worse overall survival (**53% vs. 76%, P<0.05), as well as **IPI>2** (52% vs. 82%, P<0.05).

TABLE 1

	Total sample (*n=151*)	**Sample for the variable**	
Median age (range)	63,9 (22-88)		
Male/Female	65 (43%)/86 (57%)		
B-2-microglobulin elevated	65 (65%)	*n=100*	
LDH elevated	66 (65%)	*n=102*	
ECOG-PS ≥2	13 (14%)	*n=94*	
Stages III/IV	79 (73%)	*n=108*	
B Symptoms	41 (45%)	*n=91*	
Extranodal involvement	77 (73%)	*n=106*	
Extranodal involvement >1 area	38 (37%)	*n=104*	
IPI 3-5	52 (50%)	*n=105*	
BIOLOGICAL PARAMETERS		**According to CO**	
Non-GC phenotype	81 (55%)	**CG (n=66)**	**non-GC (n=81)**
Double expressor	36 (38%)	14/41 (34%)	22/53 (42%)
BCL2 rearrangement	32 (21%)	26 (39%)	5 (6%)
MYC rearrangement	14 (9%)	10 (15%)	4 (5%)
Double Hit	10 (7%)	8 (12%)	2 (3%)
BCL6 rearrangement	40 (27%)	13 (20%)	25 (31%)
del17p	24 (16%)	10 (15%)	13 (16%)
Response		*n=107*	
○ **RC**	74 (69%)		
○ **RP**	9 (8%)		
○ **Progression**	24 (21%)		

LDH: Lactate Dehydrogenase, CO: cell of origin; GC: germinal center; CR, complete remission; PR: partial response



PFS 2 years:

- No-rearrangement: 91,3%
- BCL6: 81,4%
- BCL2: 64,6%
- MYC: 0%
- DH: 34,3%
- MYC-BCL6: 0%

TABLE 2

	PFS-2y	
	p-value	***Hazard Ratio, 95% CI***
IPI		
0-2	ref.	-
3-5	**<0,01**	5,3 (2,2-12,6)
FISH BCL2, MYC y DH		
No	ref.	-
MYC	0,42	-
BCL2	**<0,01**	4,5 (1,9-11,1)
DH	**<0,01**	7,8 (2,4-25,6)
del 17p		
No	ref.	
Yes	0,22	

CONCLUSIONS

1. *Del(17p)* was an independent predictor of survival in patients with DLBCL treated with first-line immunochemotherapy.
2. As previously described, *BCL2, MYC*, and DH rearrangements were associated with poorer PFS.
3. Larger studies are needed to confirm the prognostic value of the less prevalent alterations, *MYC and del(17p).*

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