

# Impact of positron emission tomography - computed tomography status on progression-free survival for relapsed follicular lymphoma patients undergoing autologous stem cell transplantation

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## Supplementary Tables and Figures

### Supplementary Table 1: Patient and disease characteristics according to inclusion in study

N (%) unless otherwise specified		Included Patients N=172	Excluded patients N=184	<i>P value Included v. Excluded</i>	Participating but ineligible (transformed) N=25
Age at diagnosis	Median (y, range)	53 (17-69)	53 (16 – 72)	0.764 <sup>1</sup>	52 (36 – 69)
Age at transplant	Median (y, range)	58 (22-74)	57 (17 – 73)	0.366 <sup>1</sup>	59 (37 – 77)
	> 60 years	80 (47%)	81 (44%)	0.671 <sup>2</sup>	11 (44%)
Time from diagnosis to transplant		4y 2m (4m-26y)	4y (3m – 27y)	0.481 <sup>1</sup>	4y 3m (7m – 23y)
Sex	Female	75 (44%)	85 (47%)	0.593 <sup>2</sup>	11 (44%)
	Male	97 (56%)	96 (53%)		14 (56%)
Number of lines of prior treatment	1	3 (2%)	8 (6%)	<b>0.001<sup>3</sup></b>	11 (44%)
	2	63 (37%)	74 (52%)		6 (24%)
	3	57 (33%)	40 (28%)		4 (16%)
	4	26 (15%)	11 (8%)		3 (12%)
	>4	22 (13%)	10 (7%)		1 (4%)
	Median (range)	3 (1-6)	2 (1-6)		2 (1-6)
Prior Rituximab		133 (77%)	114 (62%)	<b>0.002<sup>2</sup></b>	17 (68%)
Prior Obinutuzumab		20 (12%)	6 (3%)	<b>0.004<sup>2</sup></b>	0 -
POD24	No	40 (55%)	18 (90%)	0.738 <sup>2</sup>	15 (79%)
	Yes	33 (45%)	2 (10%)		4 (21%)
	unknown	99	164		6
Karnofsky status at SCT	100	45 (27%)	37 (22%)	<b>0.001<sup>3</sup></b>	14 (61%)
	90	101 (62%)	74 (45%)		7 (30%)
	80	17 (10%)	39 (23%)		1 (4%)
	70	1 (1%)	12 (7%)		1 (4%)
	60	0	4 (2%)		0
	Unknown	8	18		2
	Median (range)	90 (70-100)	90 (60 – 100)		100 (70 – 100)
Comorbidities: HCT-CI	0	108 (63%)	127 (69%)	0.574 <sup>3</sup>	16 (64%)
	1	32 (19%)	19 (10%)		2 (8%)
	2	11 (6%)	14 (8%)		4 (16%)
	3	12 (7%)	15 (8%)		2 (8%)
	4	4 (2%)	3 (2%)		1 (4%)
	5	2 (1%)	1 (1%)		0

<b>N (%) unless otherwise specified</b>		<b>Included Patients N=172</b>	<b>Excluded patients N=184</b>	<b>P value Included v. Excluded</b>	<b>Participating but ineligible (transformed) N=25</b>
	≥6	3 (2%)	5 (3%)		0
	Median (range)	0 (0-6)	0 (0 – 13)		0 (0 - 4)
Conditioning	BEAM	82 (48%)	118 (67%)	<b>0.001<sup>2</sup></b>  (BEAM vs. other)	14 (56%)
	LEAM	58 (34%)	47 (27%)		6 (24%)
	EAM	21 (12%)	5 (3%)		2 (8%)
	LEAC	4 (2%)	0		
	EM	4 (2%)	0		
	BAM	1 (1%)	0		2 (8%)
	BEA	1 (1%)	2 (1%)		1 (4%)
	Unknown	1	12		0
HGT before SCT		22 (13%)	1 (1%)	<b>0.001<sup>2</sup></b>	21 (84%)
Histological grading	1	35 (27%)	26 (21%)	0.419 <sup>2</sup>	4 (24%)
	2	56 (43%)	50 (41%)	0.184 <sup>3</sup>	5 (29%)
	3	39 (30%)	45 (37%)		8 (47%)
	Unknown	42	63		8
Months since last relapse <sup>4</sup>	Median (range)	8 (1-54)	8 (3 – 40)	0.704 <sup>1</sup>	5 (3 – 13)
Ann Arbor stage	I	3 (3%)	2 (10%)	<b>0.008<sup>3</sup></b>	0
	II	15 (14%)	9 (47%)		3 (18%)
	III	33 (31%)	1 (5%)		6 (35%)
	IV	55 (52%)	7 (37%)		8 (47%)
	Unknown	70	165		8
Number of nodal sites	0-4	66 (72%)	15 (83%)	<b>0.001<sup>2</sup></b>	14 (70%)
	>4	26 (28%)	3 (17%)		6 (30%)
	Unknown	80	166		5
	Median (range)	3 (0-9)	2 (1 – 5)		3 (0 – 6)
LDH	> ULN	19 (26%)	1 (5%)	0.062 <sup>2</sup>	8 (53%)
	Unknown	100	165	10	
Haemoglobin	Median (range)	127 (51-163)	137.5 (90 – 254)	<b>0.0376<sup>1</sup></b>	125 (84 – 197)
	≥120	54 (64%)	15 (75%)	0.436 <sup>2</sup>	11 (65%)
	Unknown		164		8
Deauville score	1	17 (21%)		N/A	
	2	24 (29%)			
	3	16 (20%)			

<b>N (%) unless otherwise specified</b>		<b>Included Patients N=172</b>	<b>Excluded patients N=184</b>	<b>P value Included v. Excluded</b>	<b>Participating but ineligible (transformed) N=25</b>
	4	23 (28%)			
	5	2 (2%)			
	Unknown	90			
Status at transplant	CR	105 (62%)	69 (40%)	<b>0.001<sup>2</sup></b>	16 (70%)
	PR	62 (37%)	93 (54%)		6 (26%)
	SD / Relapse / PD	2 (1%)	11 (6%)		1 (4%)
FLIPI	Low	86 (50%)	167 (91%)	<b>0.001<sup>3</sup></b>	11 (44%)
	Low-intermediate	47 (27%)	13 (7%)		4 (16%)
	High intermediate	33 (19%)	3 (2%)		4 (16%)
	High	6 (3%)	1 (1%)		6 (24%)
Year of transplant	2015	20 (12%)	42 (23%)	0.384	5
	2016	32 (19%)	34 (19%)		
	2017	55 (32%)	33 (18%)		
	2018	48 (28%)	42 (23%)		
	2019	17 (10%)	31 (17%)		

<sup>1</sup> Wilcoxon rank-sum test, <sup>2</sup> Fisher's exact test, <sup>3</sup> Logistic regression, <sup>4</sup> Does not apply to patients in CR1 or with refractory disease.  
Abbreviations: m: months, y: year, B: carmustine, E: etoposide, A: cytarabine, M: melphalan, C: cyclophosphamide, L: lomustine, POD24: progression of disease within 24 months, PET: positron emission tomography, SCT: stem cell transplantation, FLIPI: follicular lymphoma international prognostic index, CR: complete response, PR: partial response, SD: stable disease, PD: progressive disease, ULN: upper limit of normal, HGT: high grade transformation, LDH: lactate dehydrogenase

### Supplementary Table 2: Most recent therapy delivered prior to autoSCT consolidation: according to PET status.

<b>Regimen</b>	<b>CMR</b>	<b>N=103</b>	<b>Non-CMR</b>	<b>N=52</b>
Rituximab containing regimens	95	92%	43	83%
R-CHOP	46		14	
R-Bendamustine	20		14	
R-CVP	13		7	
R + Platinum based	7		3	
Rituximab +Other	9		5	
No Rituximab	8	8%	9	17%
Bendamustine	2		2	
CHOP	0		1	
CVP	1		3	
Platinum based	1		1	
Other	4		2	
Missing	12		5	

Abbreviations: R: rituximab, CHOP: cyclophosphamide, doxorubicin, vincristine, prednisolone, CVP: cyclophosphamide, vincristine, prednisolone, CMR: complete metabolic remission

**Supplementary Table 3: Causes of death by individual patient, date post autologous transplantation and according to the PET status.**

Date of death	Cause of death	Neutrophils recovered?	Platelets recovered?	PET status pre-autoSCT
D5	Cardiac arrhythmia, neutropenic sepsis	No	No	Non-CMR
D6	Bacterial infection	No	No	CMR
D13	Infection, multiorgan failure	Yes	No	Non-CMR
D14	Infection, renal failure Neutropenic sepsis	Yes	No	CMR
D18	Bacterial infection, multiorgan failure	No	No	CMR
D34	Relapse	Yes	No	CMR
D36	Pneumonia	Yes	No	Non-CMR
D57	Pneumonia	No	No	CMR
D97	Infection "sepsis"	Yes	Yes	Non-CMR
D117	Relapse	Yes	No	CMR
D210	Relapse	Yes	Yes	CMR
D218	Renal failure	Yes	Yes	Non-CMR
D290	Relapse	Yes	Yes	CMR
D358	Relapse and acute respiratory distress syndrome	Yes	Yes	CMR
D451	Relapse	Yes	Yes	Non-CMR
D500	Unknown	Yes	Yes	Non-CMR
D567	Relapse	Yes	Yes	CMR
D658	Pneumonia post alloSCT (aplasia post AutoSCT)	Yes	Unclear	Non-CMR
D704	Relapse	Yes	Yes	Non-CMR
D781	Pulmonary toxicity and infection post alloSCT	Unknown	Unknown	Non-CMR
D803	Secondary malignancy	Yes	Yes	CMR
D839	Relapse	Yes	Yes	Non-CMR
D882	Relapse, haemorrhage and multiorgan failure	Yes	Yes	Non-CMR
D907	Graft versus host disease post-alloSCT and relapse	Yes	Yes	CMR
D928	Relapse	Yes	Yes	Non-CMR
D946	Relapse and HHV encephalitis post-alloSCT	Yes	Yes	CMR
D1086	Unknown	Yes	Yes	CMR
D1096	Secondary acute myeloid leukaemia	Yes	Yes	CMR
D1134	Relapse and pneumonia	Yes	Yes	Non-CMR
D1170	Relapse	Yes	Unknown	CMR
D1267	Relapse	Yes	Unknown	CMR
D1268	Relapse	Yes	Yes	CMR
D1302	Gram negative sepsis, Hepatitis B reactivation	Yes	Yes	CMR
D1732	Relapse	Yes	Yes	CMR

Abbreviations: SCT: stem cell transplantation, HHV: Human herpes virus, CMR: complete metabolic remission

## Supplementary Figure Legend

**Figure 1S** Consort Diagram

**Figure 2S: Survival for all patients in cohort**

**Figure 2SA** Progression-free survival for all patients receiving an autologous stem cell transplantation

**Figure 2SB** Overall survival for all patients receiving an autologous stem cell transplantation

**Figure 3S: Survival according to Deauville score pre-autologous stem cell transplantation**

**Figure 3SA** Progression-free survival according to Deauville score pre-autologous stem cell transplantation

**Figure 3SB** Overall survival according to Deauville score pre-autologous stem cell transplantation

**Figure 1S**

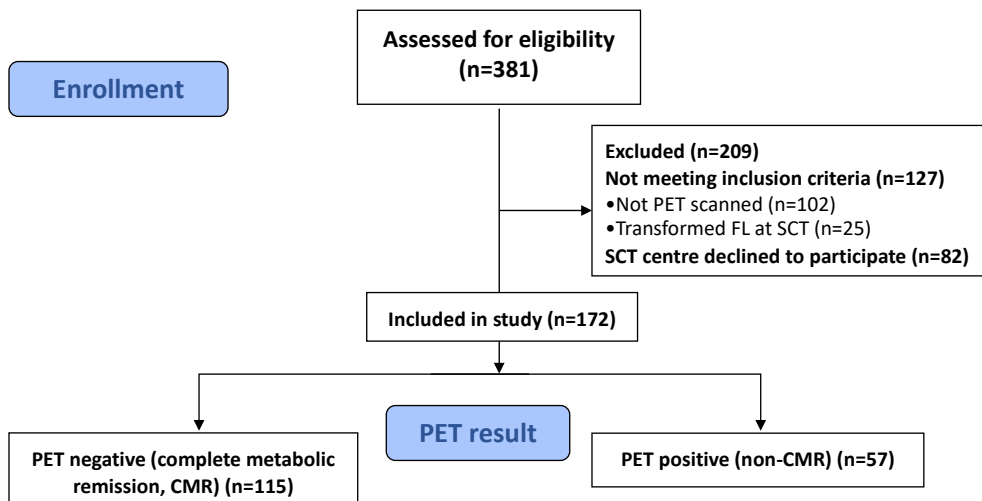


Figure 2SA

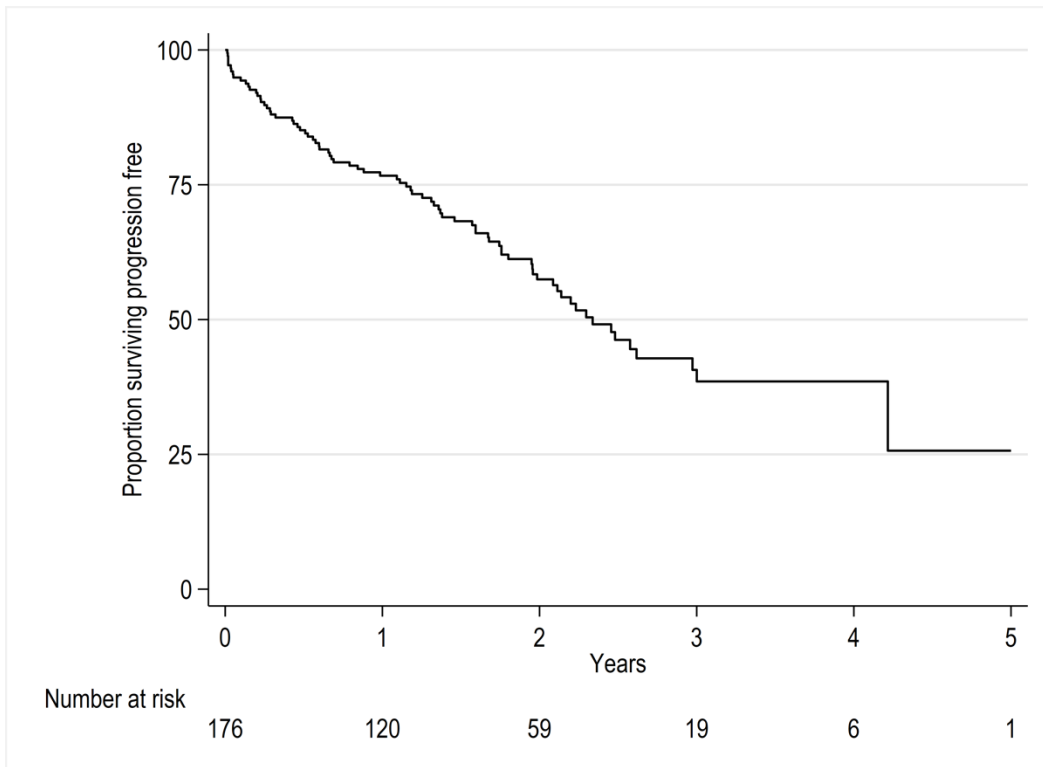


Figure 2SB

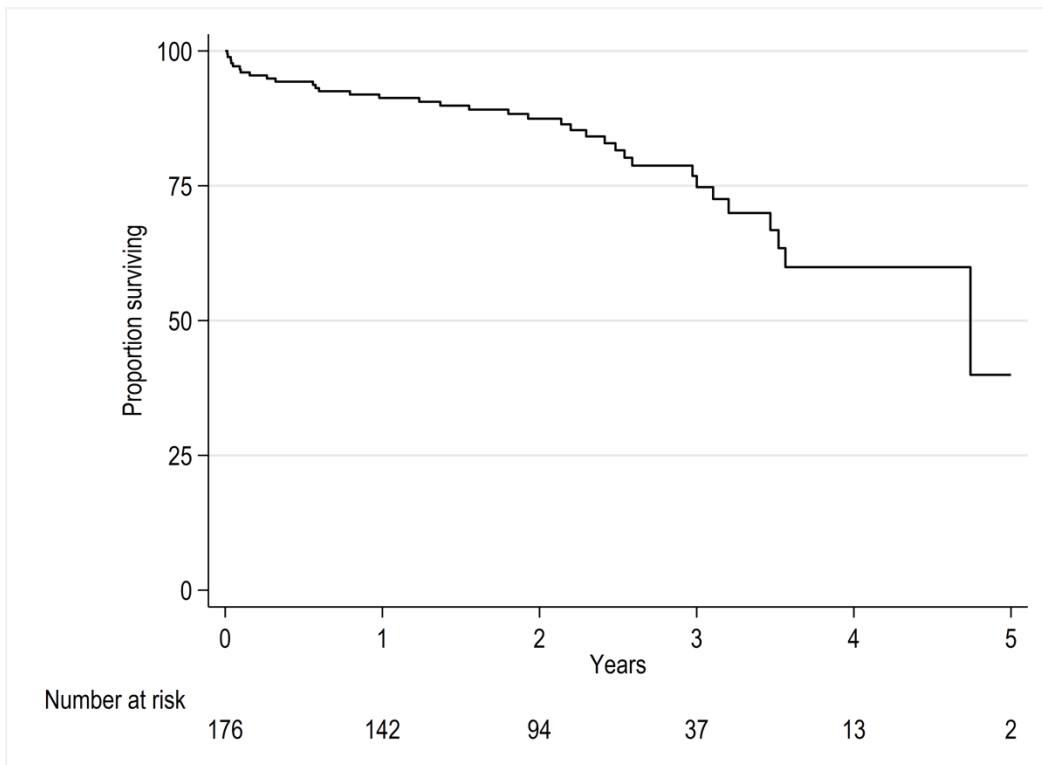


Figure 3SA

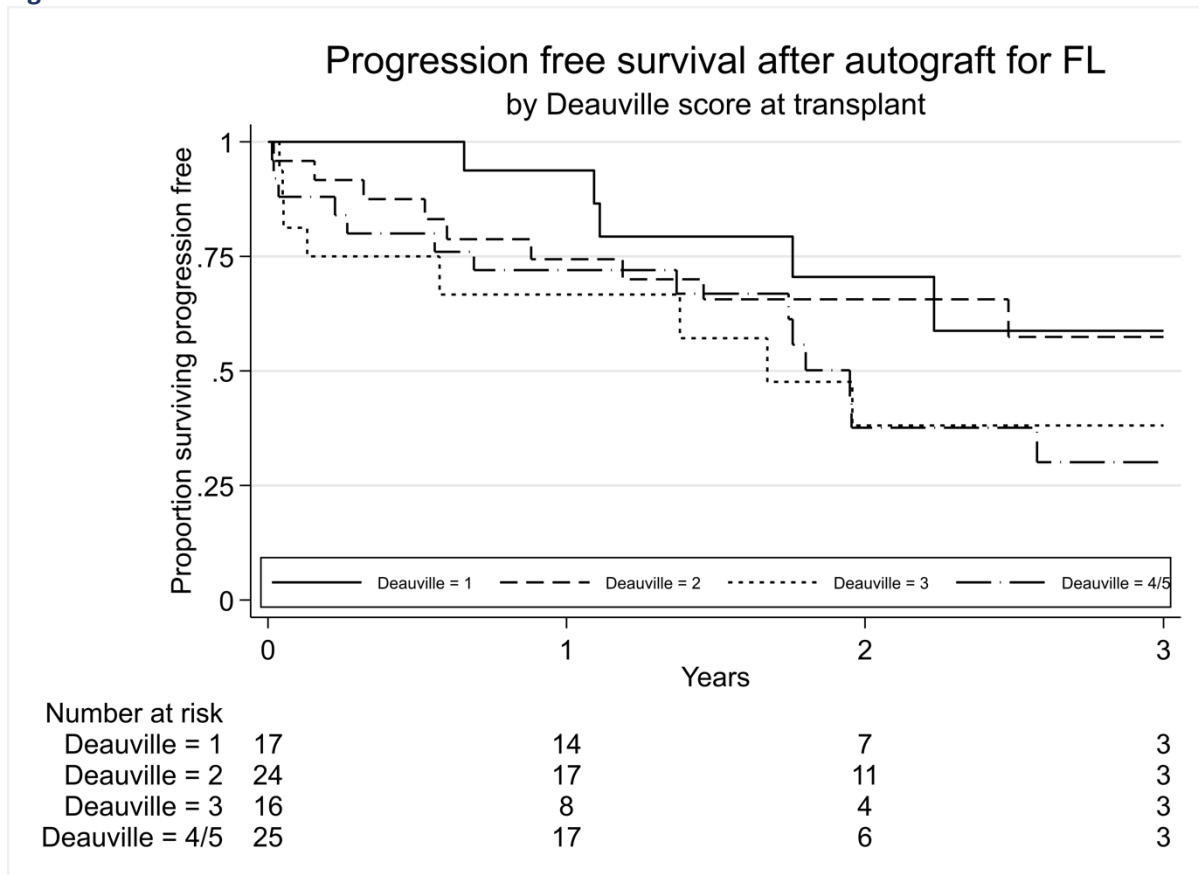


Figure 3SB

