

Disclosures

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Lymphoma
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MOR208 in R/R B-cell Malignancies



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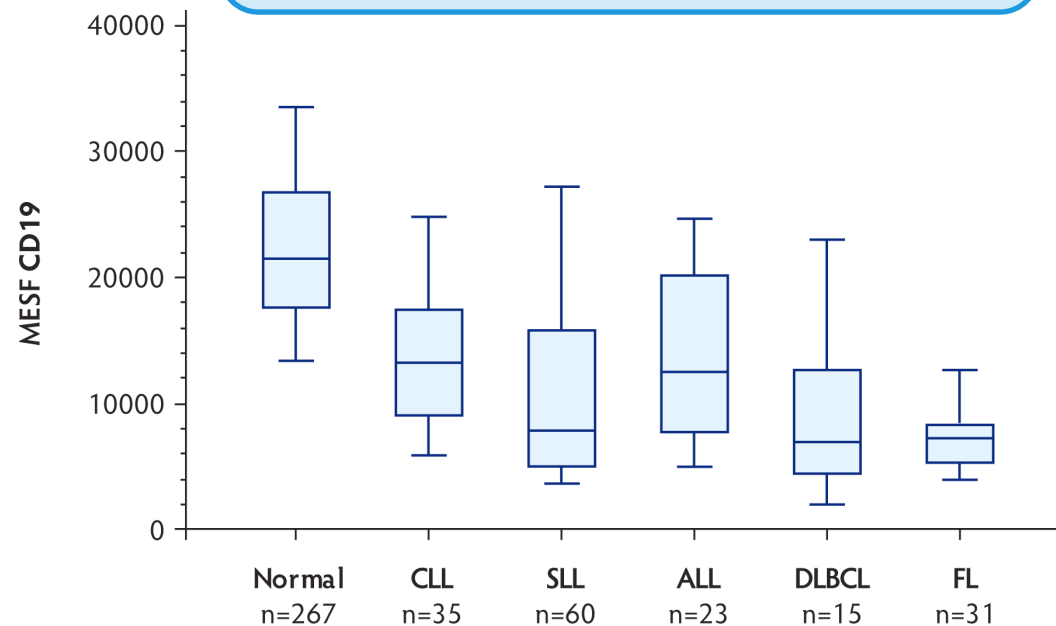
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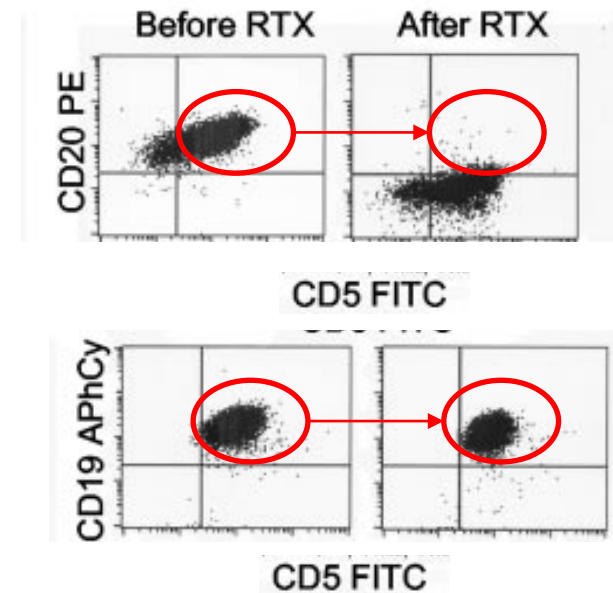


CD19 Expression on B-Cell Tumors

CD19 is broadly and homogeneously expressed across different B-cell malignancies



Anti-CD19 expression is preserved after therapy



Anti-CD20 treatment might lead to loss of target

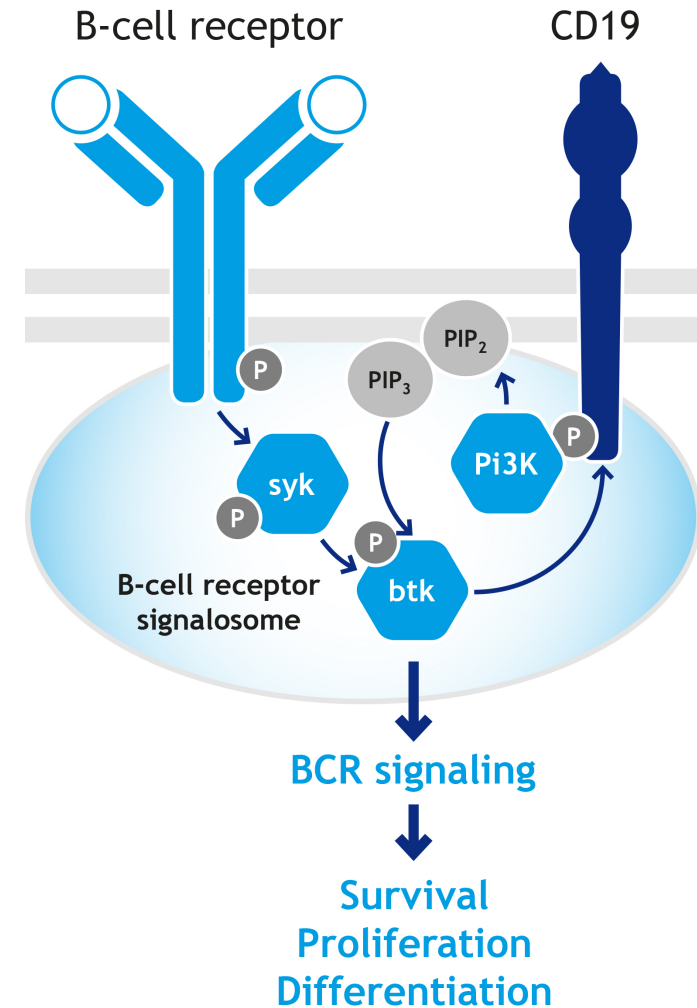
Olejniczak SH, et al. Immunol Invest 2006;
Ginaldi L, et al. J Clin Pathol 1998;

Kennedy et al., 2004, Davis et al., 1999,
Taylor et al., 2014, Skarzynski et al 2015

CD19: Role and Therapeutic Target

- CD19 plays a key role in B-cell:
 - **Development**¹
 - **Proliferation**¹
 - **Signalling**¹
- CD19 enhances B-cell antigen receptor (BCR) signalling²⁻⁴
 - CD19 amplifies **PI3K** and **BTK** activity²⁻⁴

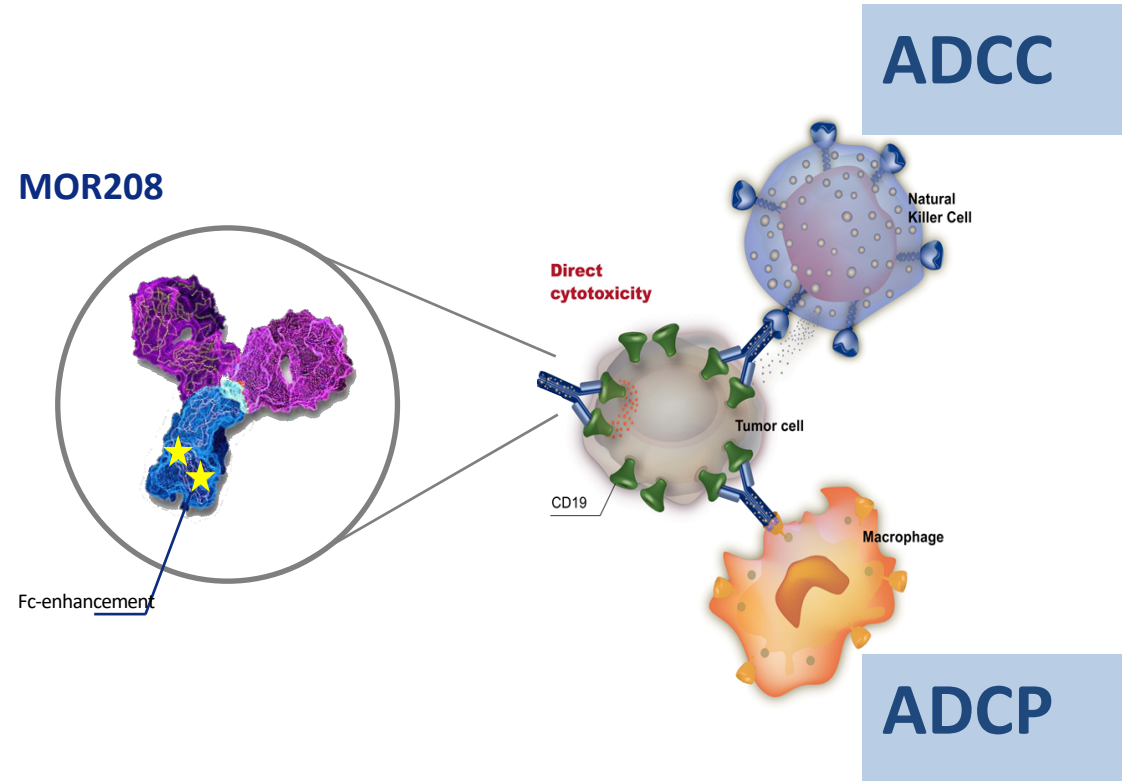
Therefore, CD19 appears an attractive target for new therapeutic approaches to B-cell malignancies



1. Katz et al Leuk & Lymph, 2014; 2. Fujimoto et al. Semin Immunol 1998
3. Fujimoto et al. Immunity 4. Poe et al. J Immunol 2012

MOR208: An enhanced CD19 Antibody

- **MOR208** is an Fc-enhanced monoclonal antibody that targets CD19
- Fc-enhancement of MOR208 leads to a potentiation of **ADCC** and **ADCP**
- MOR208 induces **direct cytotoxicity**

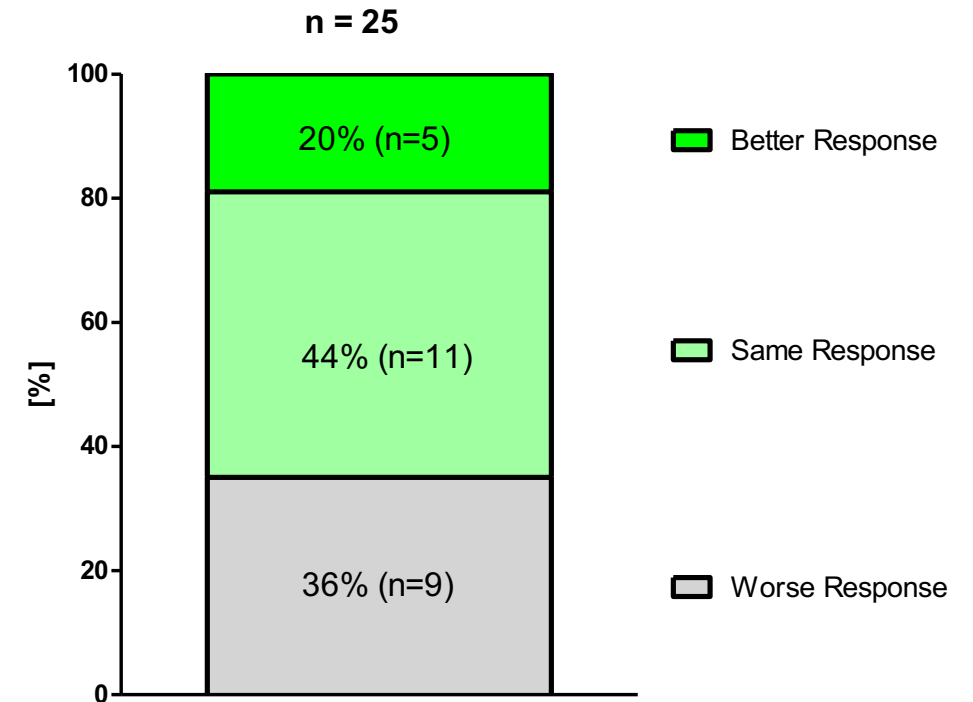


ADCC, antigen-dependent cell-mediated cytotoxicity;
ADCP, antigen-dependent cell-mediated phagocytosis

Phase I: MOR208 in in R/R CLL

A typical design of phase I dose escalating study

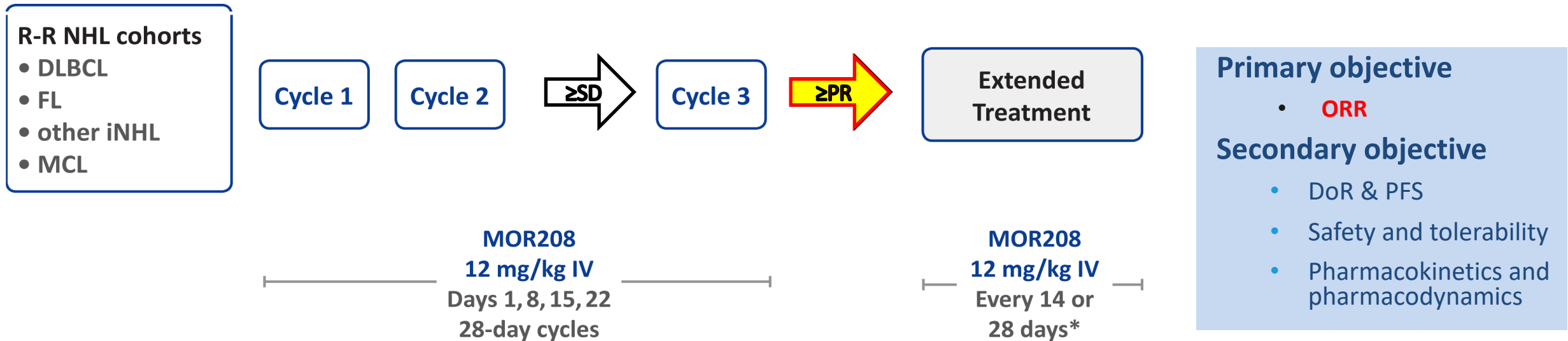
Response, n (%)	All patients (N=27)	Patients at recommended dose (12 mg/kg; N=16)
CT criteria*		
CR	0	0
PR	8 (30%)	6 (38%)
SD	17 (63%)	10 (62%)
PD	2 (7%)	0
Physical exam and lab only		
CR	0	0
PR	18 (67%)	12 (75%)
SD	9 (33%)	4 (25%)
PD	0	0



Response to MOR208 in comparison to last prior anti-CD20 containing regimen (IWCLL 2008)

Phase II a: MOR208 in R-R NHL – study design

Multicentre study with 2-stage design (NCT01685008)



Excluding Patients with SD from further therapy
Leads to underestimation of MOR-208 efficacy
- especially in iNHL

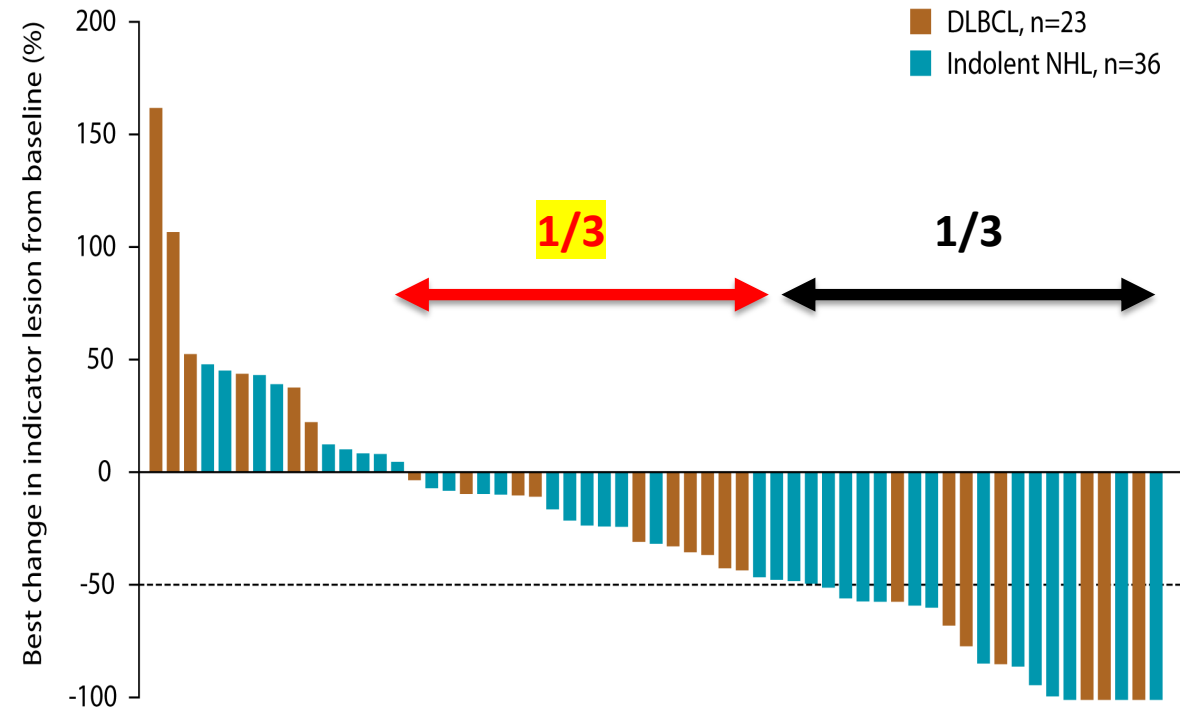
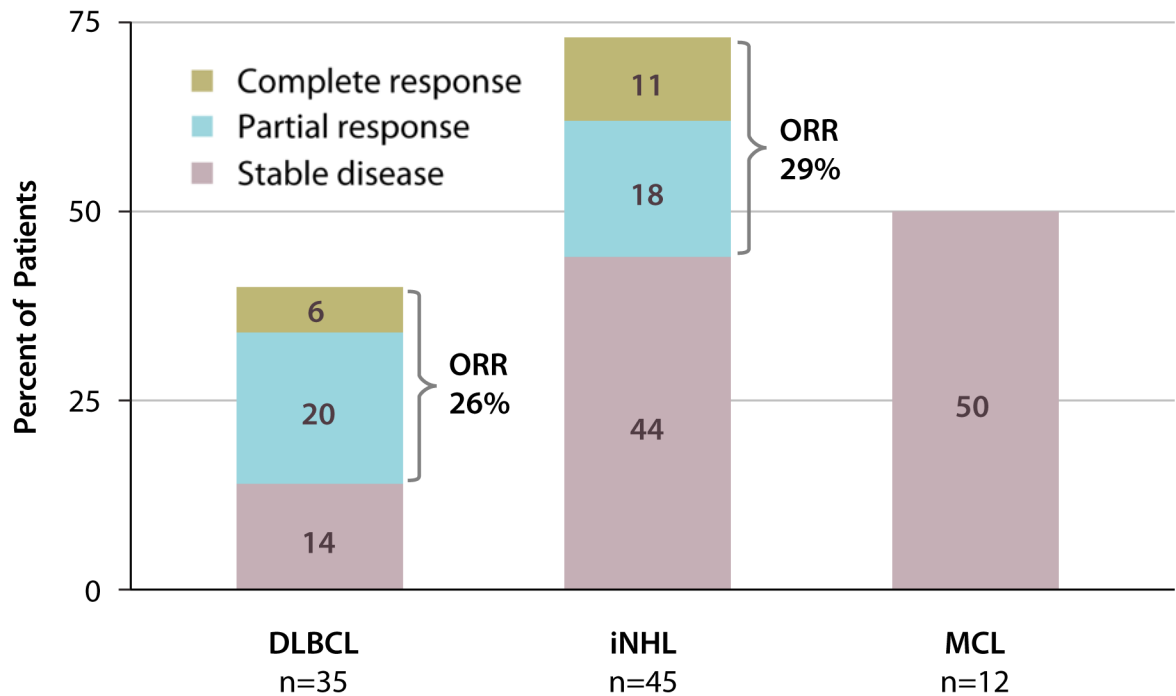
Phase II a: MOR208 in R-R NHL – Baseline Characteristics

Characteristic, n (%)		DLBCL n=35	iNHL* n=45	MCL n=12	Total n=92
Age, years	Median	71	66	64.5	66.5
Sex	Male	24 (69)	21 (47)	11 (92)	56 (61)
Ann Arbor stage	I-II	4 (11)	5 (11)	1 (8)	10 (11)
	III-IV	30 (86)	40 (89)	11 (92)	81 (88)
	Missing	1 (3)	0	0	1 (1)
ECOG PS	0-1	34 (97)	43 (96)	11 (92)	88 (96)
	2	1 (3)	2 (4)	1 (8)	4 (4)
Prior lines of therapy	1	12 (34)	16 (36)	3 (25)	31 (34)
	2	8 (23)	6 (13)	1 (8)	15 (16)
	≥3	15 (43)	23 (51)	8 (67)	46 (50)
Rituximab refractory	Yes	24 (69)	22 (49)	6 (50)	52 (57)
Last rituximab dose	<6 months	14 (40)	6 (13)	1 (8)	21 (23)
Prior stem cell transplantation	Yes	4 (11)	8 (18)	1 (8)	13 (14)

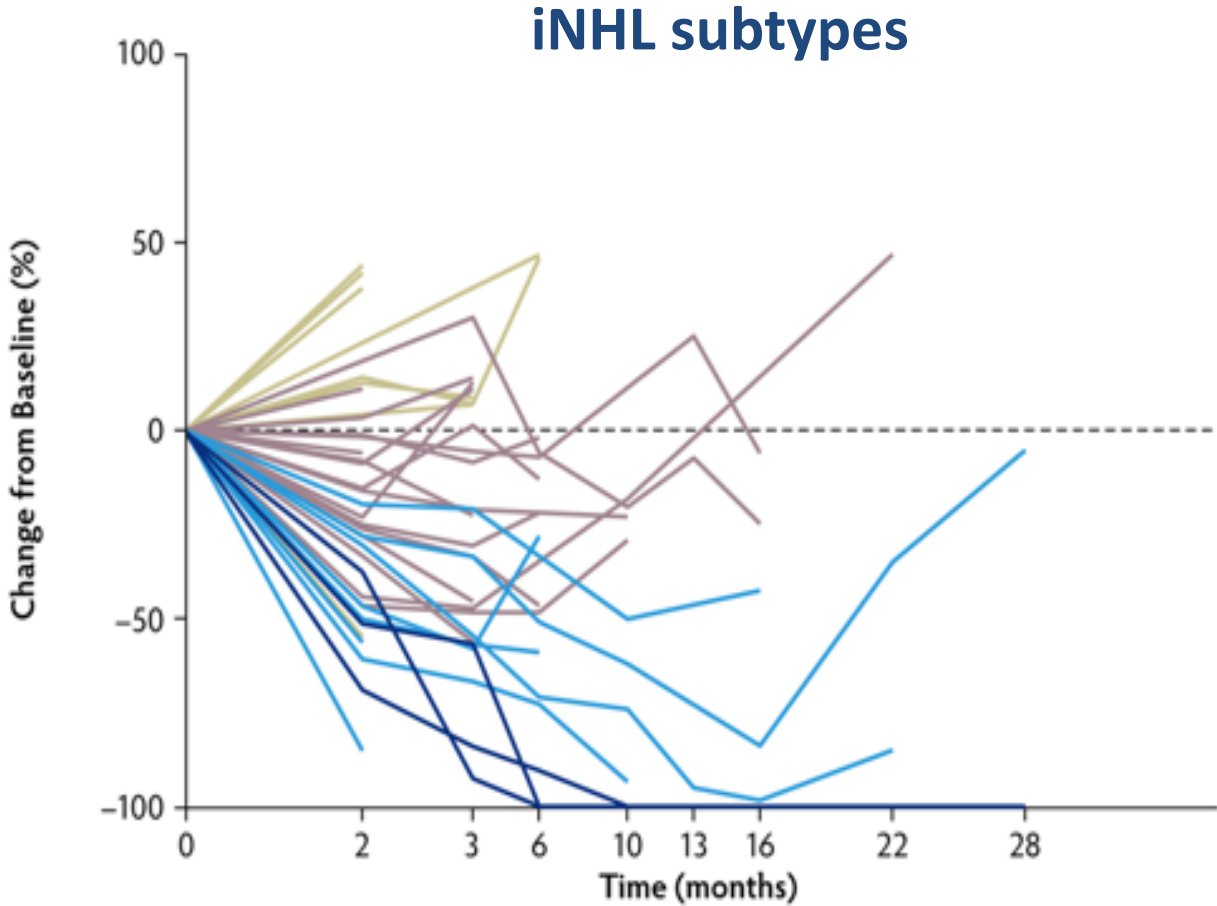
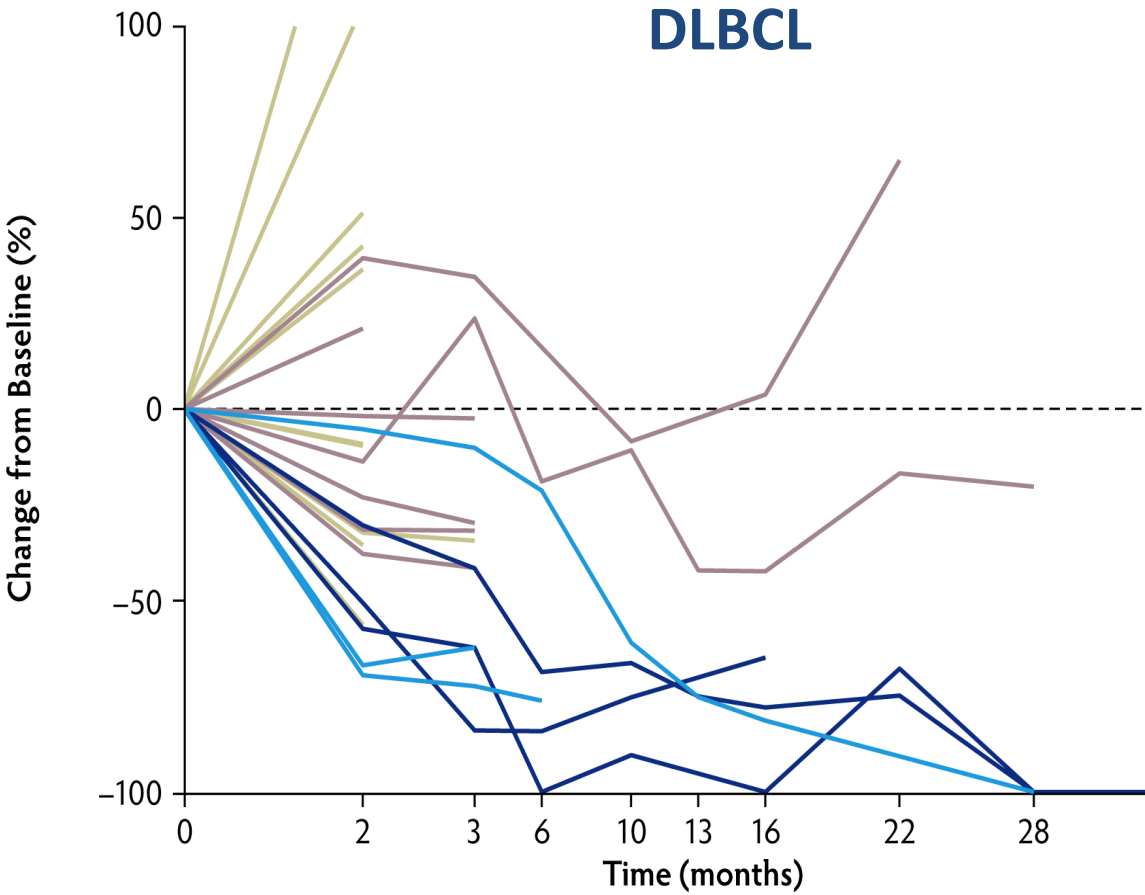
*Includes follicular lymphoma and other indolent NHLs

Data are n (%) unless otherwise stated. Rituximab refractory was defined as patients who demonstrated less than a partial response or response lasting less than 6 months to a prior rituximab-containing regimen

Phase II a: MOR208 in R-R NHL – Best Overall Response Rate



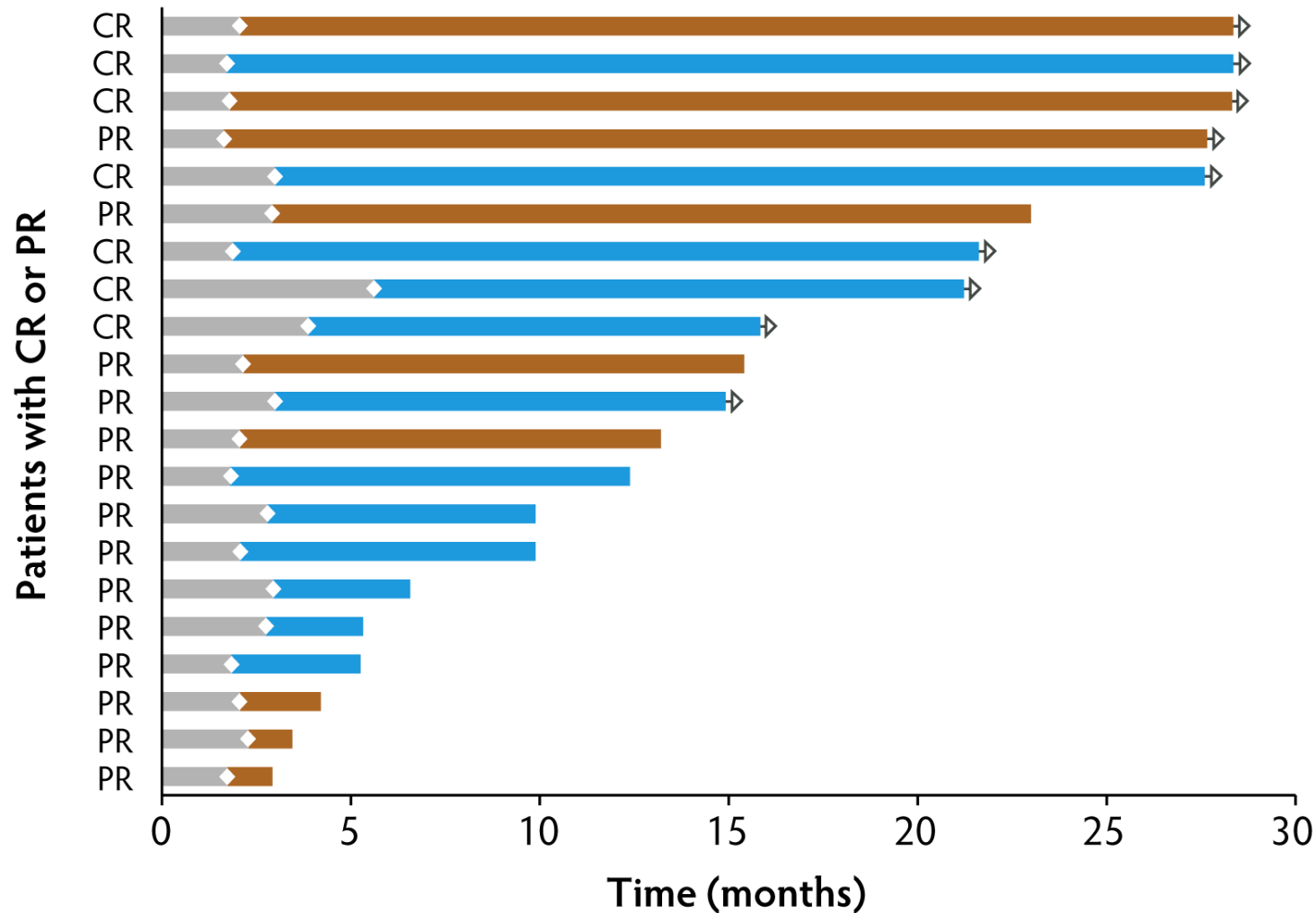
Phase II a: MOR208 in R-R NHL – Tumor shrinkage spiderplots



Jurczak et al., Ann.Oncol 2018



Phase II a: MOR208 in R-R NHL –Duration of Response



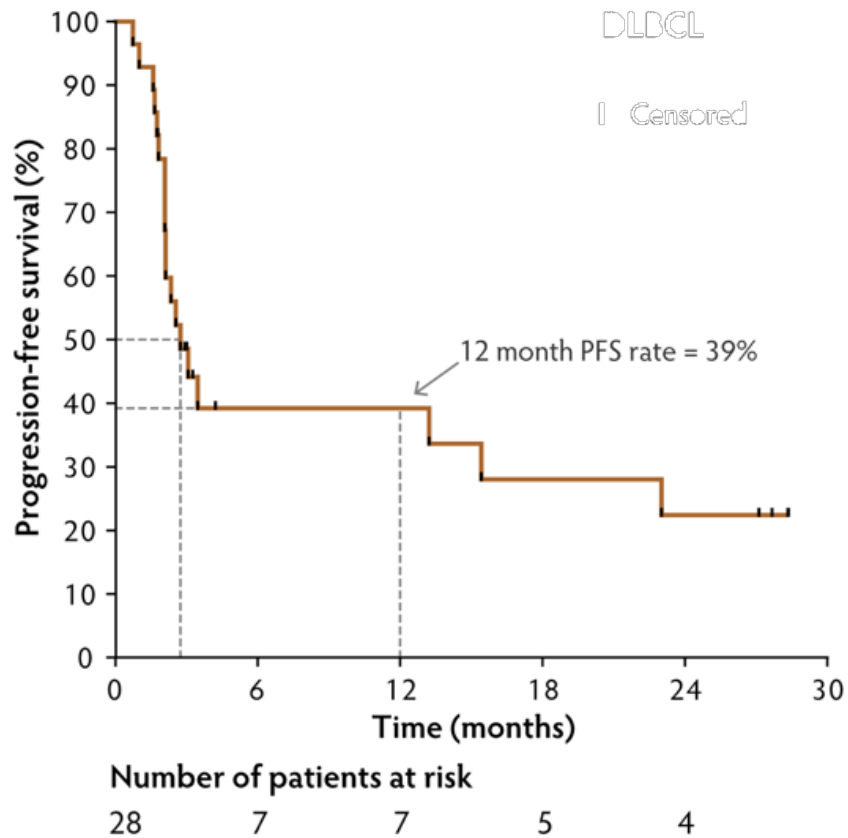
Duration of response

- DLBCL, n=9
- Indolent NHL,* n=12
- Ongoing response, n=9
- Time to response, n=21

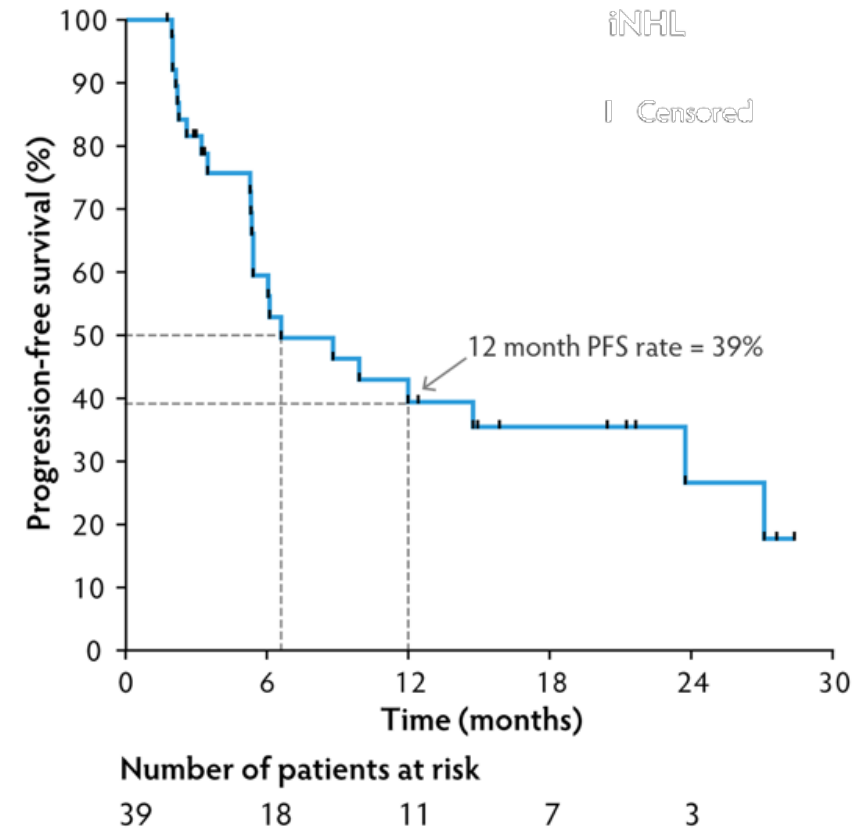
- 3 DLBCL patients still in remission, longest DoR >26 months, ongoing
- 6 iNHL patients still in remission, longest DoR >26 months, ongoing
- Median DoR 20.1 months in DLBCL and not reached in iNHL**

Phase II a: MOR208 in R-R NHL – PFS

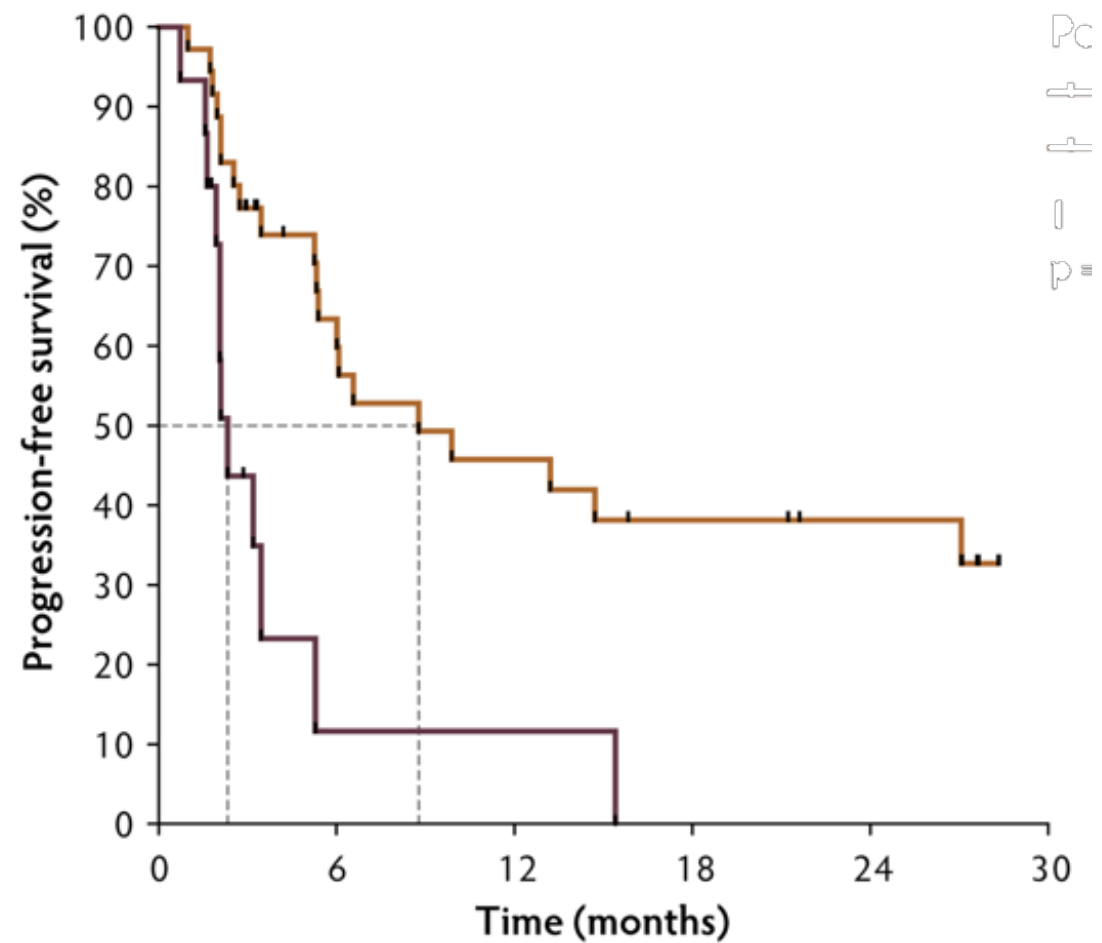
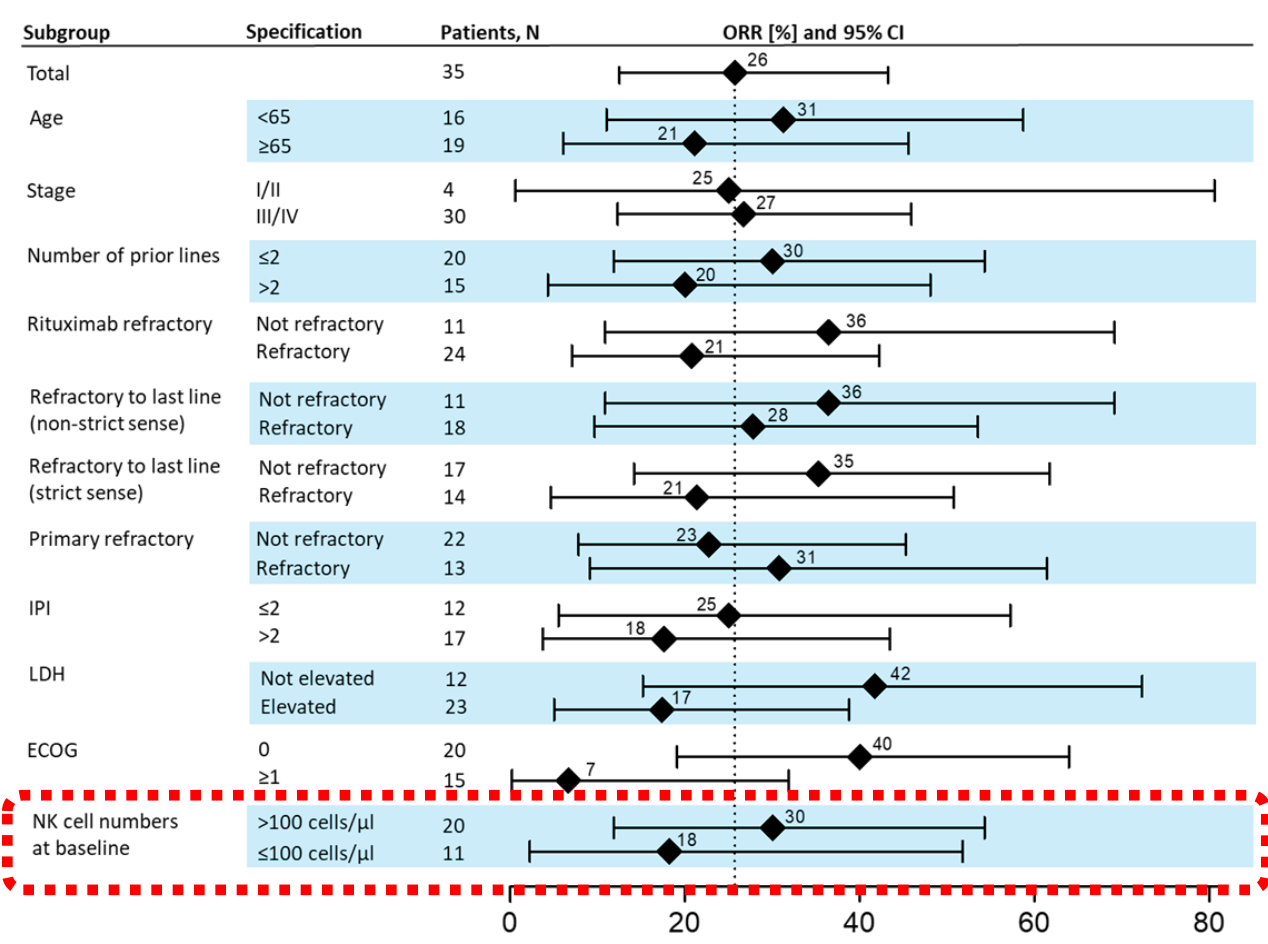
DLBCL



iNHL subtypes

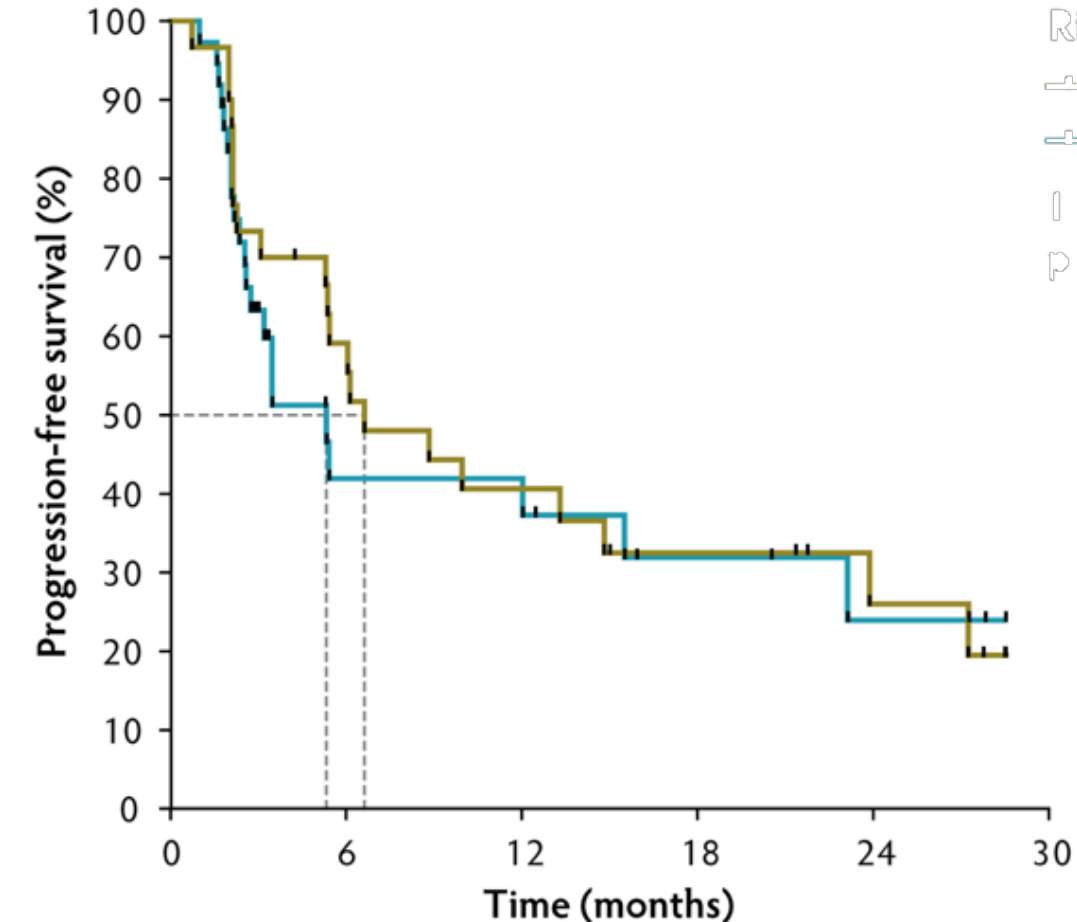
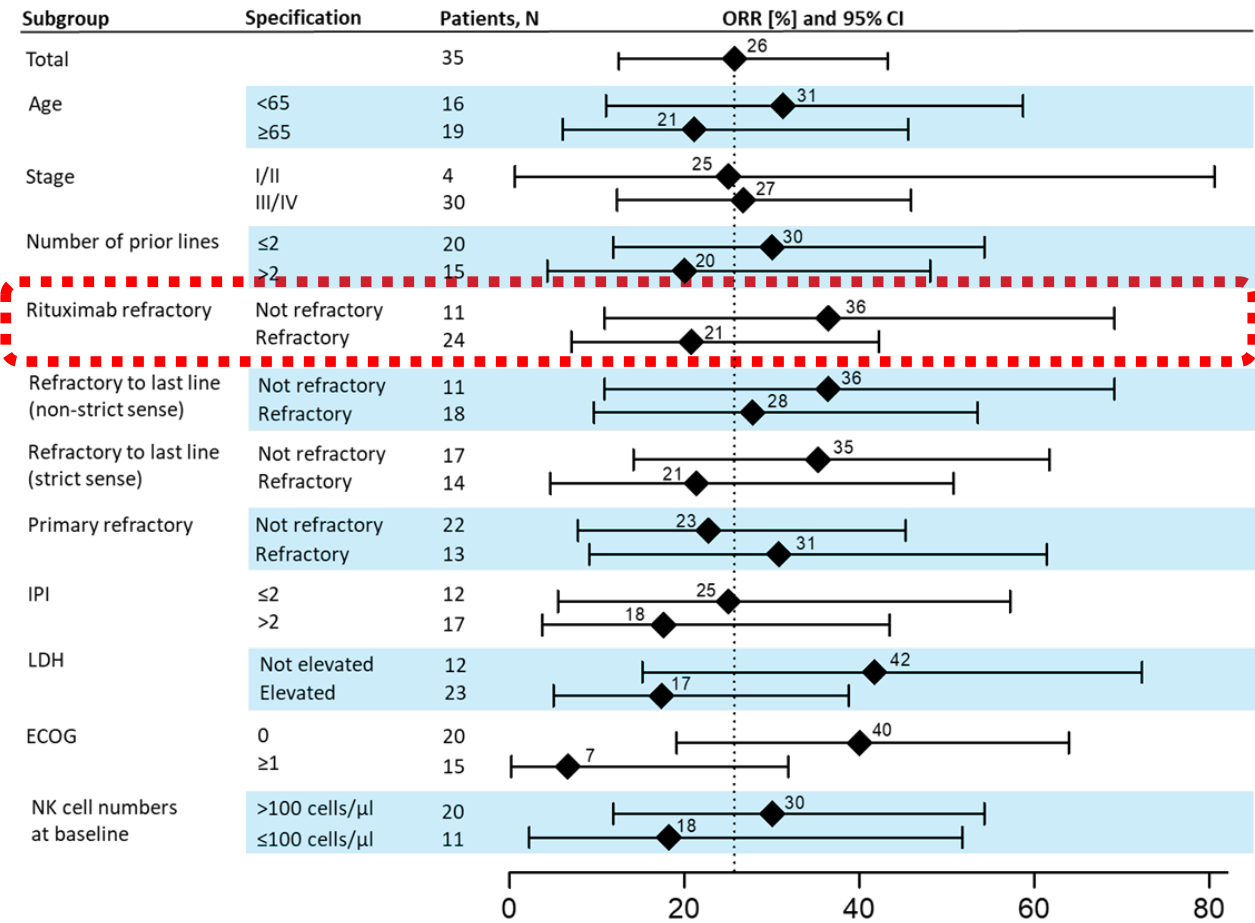


Phase II a: MOR208 in R-R NHL – Subgroup Analysis



Jurczak et al., Ann.Oncol 2018

Phase II a: MOR208 in R-R NHL – Subgroup Analysis



Jurczak et al., Ann.Oncol 2018

Phase II a: MOR208 in R-R NHL – AE Profile

Grade ≥3 TEAEs, * n (%)	DLBCL n=35	iNHL [†] n=45	MCL n=12	Total n=92
Any[‡]	19 (54)	14 (31)	4 (33)	37 (40)
Hematological[‡]				
Neutropenia	6 (17)	2 (4)	0	8 (9)
Thrombocytopenia	2 (6)	1 (2)	1 (8)	4 (4)
Anemia	3 (9)	0	0	3 (3)
Non-Hematological[‡]				
Dyspnea	2 (6)	1 (2)	1 (8)	4 (4)
Pneumonia	3 (9)	0	0	3 (3)
Fatigue	1 (3)	1 (2)	0	2 (2)
Hypokalemia	1 (3)	1 (2)	0	2 (2)
Infections and Infestations[#]	5 (14)	1 (2)	0	6 (7)
Infusion-related, n (%)	DLBCL n=35	iNHL [†] n=45	MCL n=12	Total n=92
Any	4 (11)	5 (11)	2 (17)	11 (12)
Grade 1/2	4 (11)	4 (9)	2 (17)	10 (11)
Grade 4	0	1 (2)	0	1 (1)

There were no treatment-related deaths

MOR208 Single Agent in R/R NHL

MOR208

Showed encouraging single-agent activity in R-R DLBCL and R-R iNHL for further development:

- **ORR: 26% in DLBCL and 29% in iNHL**
- **Target lesion shrinkage also observed in patients with stable disease** (5/6 DLBCL and 14/17 iNHL)
- Efficacious in patients with **rituximab-refractory disease**

MOR208

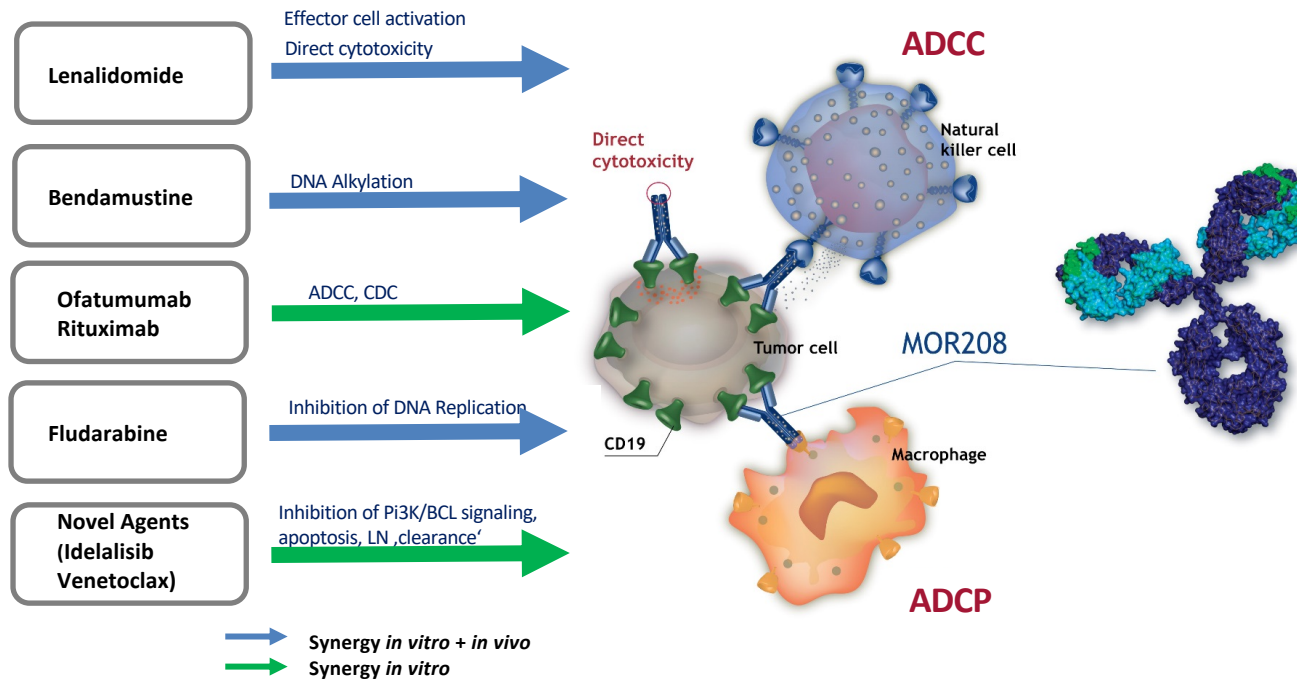
Is able to induce **long-lasting responses** in DLBCL and iNHL

- **12 month PFS rate: 39%** in DLBCL and iNHL
- Longest responses: five iNHL and one DLBCL patient are on treatment for more than 4 years

MOR208

- **Well tolerated**, also in long-term treatment

MOR 208 - Synergy with all tested B cell therapies



L-MIND II phase trial in R/R DLBCL

B-MIND III phase trial in R/R DLBCL

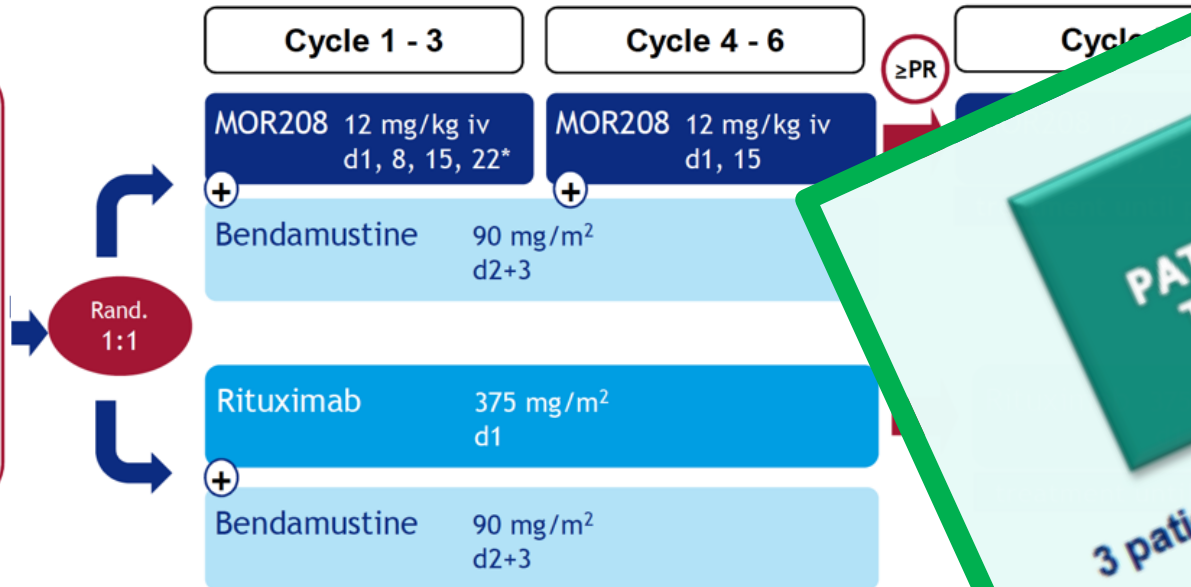
COSMOS phase II study in R/R CLL

B-MIND, phase III trial: BR vs B-MOR208

N=330

R/R DLBCL (n=330)

- 1-3 prior regimens including one anti-CD20 containing therapy
- not eligible for HDCT and ASCT
- No Double-hit lymphoma
- No CNS lymphoma



48 PATIENTS NEEDED TO COMPLETE ENROLLMENT

3 patients currently in screening

We need your support to reach our recruitment target of 330 patients enrolled in the study latest by end of July 2019

Endpoint
Endpoints
DoR.

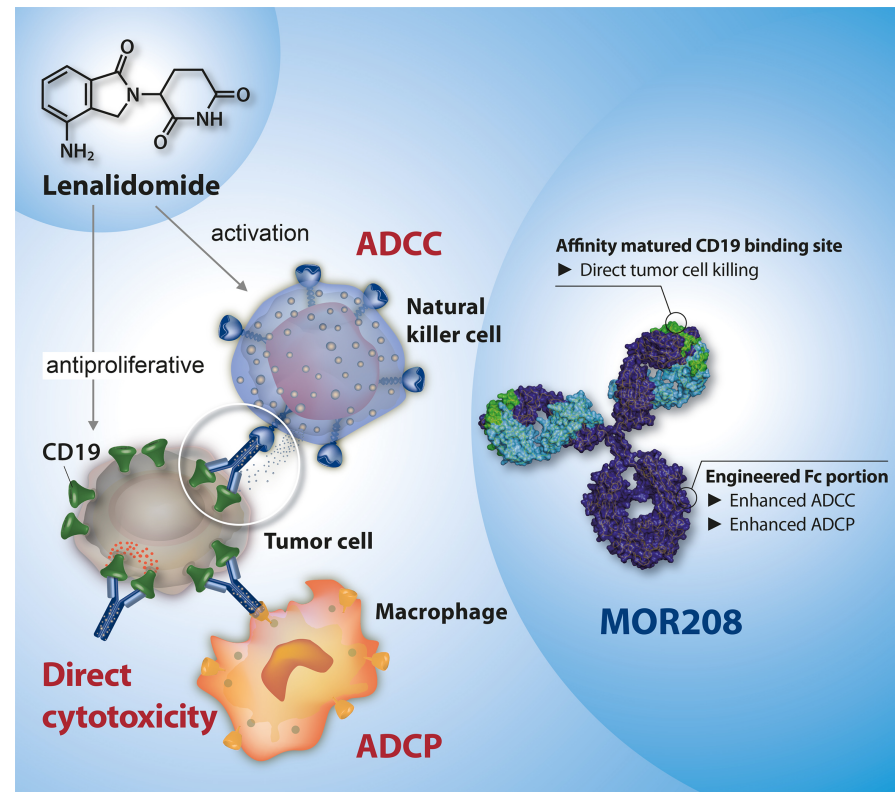
MOR208 + Lenalidomide: novel immunological combination

MOR208

- ↑ ADCC
- ↑ ADCP
- Direct Cell Death
- Encouraging single agent activity in R/R DLBCL & iNHL patients

Lenalidomide

- T and NK Cell Activation/Expansion
- Direct Cell Death
- Has been well studied as an anti-lymphoma agent, alone or in combination

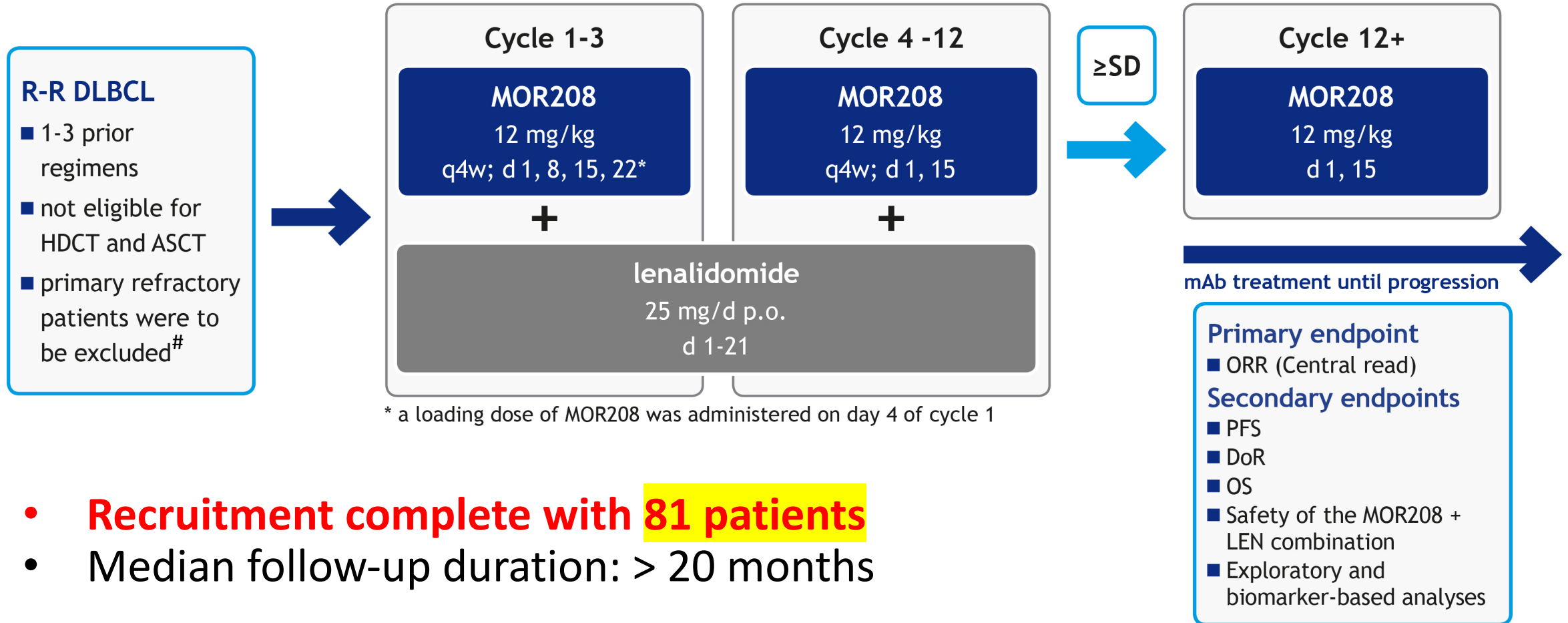


Horton et al., 2008; Awan et al., 2010; Richter et al., 2013; MorphoSys data on file; Wu et al., 2008; Lapalombella et al., 2008; Zhang et al., 2013, Wiernik et al., 2008; Witzig et al., 2011; Czuczman et al., 2017; Jurczak et al., 2018

Prof. Wojciech Jurczak MD, PhD

L-MIND: Study Design

phase 2, single-arm, open-label, multicenter study



- **Recruitment complete with 81 patients**
- Median follow-up duration: > 20 months

L-MIND: Key Eligibility Criteria

Inclusion Criteria

- Adult patients with histologically confirmed **DLBCL**
- **PET-positive measurable disease** (at least one lesion $\geq 1.5 \times 1.0$ cm)
- **1-3 prior systemic therapies**, including at least one CD20-targeted therapy
- Patients who are **not candidates for ASCT**
- **ECOG** performance status 0 to 2
- Adequate bone marrow, liver & renal function

Exclusion Criteria

- Primary **refractory DLBCL**
(Initial definition excluded relapse within 3 months of a prior immunochemotherapy, Revised definition excluded no response to or relapse / progression during or within 6 months of frontline therapy)
- **Double / triple hit** DLBCL, if already known
- Prior therapy with anti-CD19 therapy or IMiDs
- ASCT <3months prior to study start

L-MIND: Baseline characteristics

Characteristic		n (%) N=81
Age, years	Median (range)	73 (47-82)
Sex	Female/Male	27/24
Ann-Arbor	III-IV	30 (59)
ECOG-PS	0-1	47 (92)
	2	3 (6)
IPI	Low (0-1)	8 (16)
	Low-Intermediate (2)	13 (25)
	High-Intermediate (3)	9 (18)
	High (4-5)	15 (29)
Prior therapies	1	26 (51)
	≥2	24 (47)
LDH level	Elevated	28 (55)
Refractory to rituximab	Yes	18 (35)
Refractory to last prior line	Yes	21 (41)
Prior ASCT	Yes	2 (4)

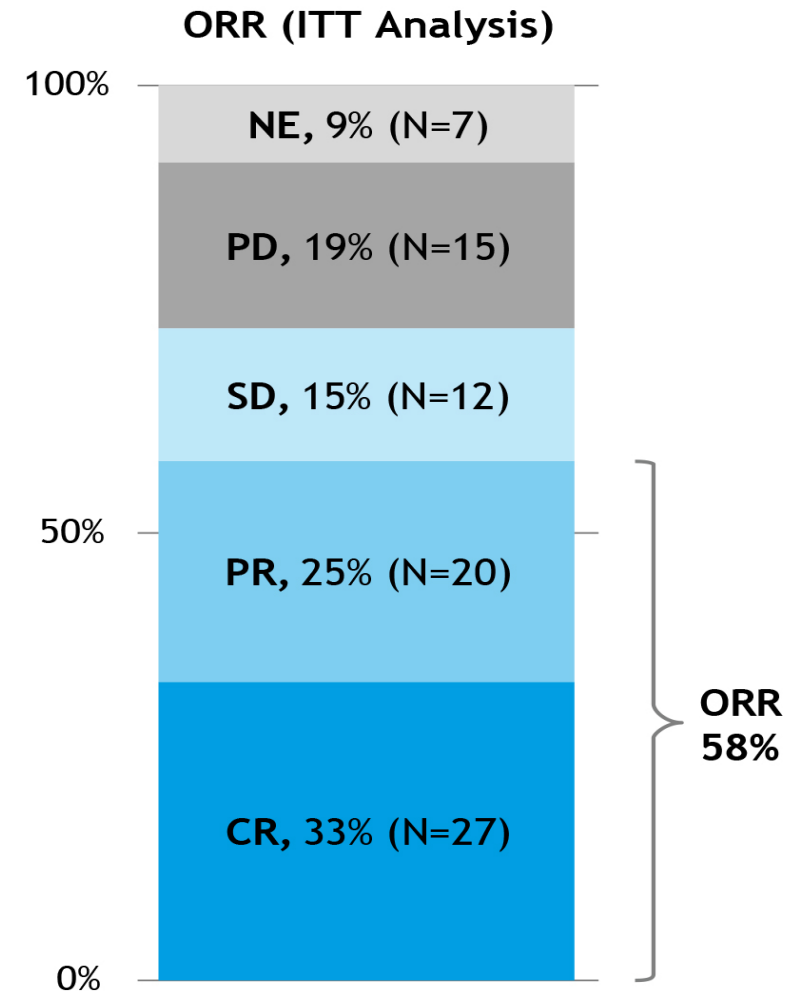


L-MIND: ORR (Objective Response Rate)

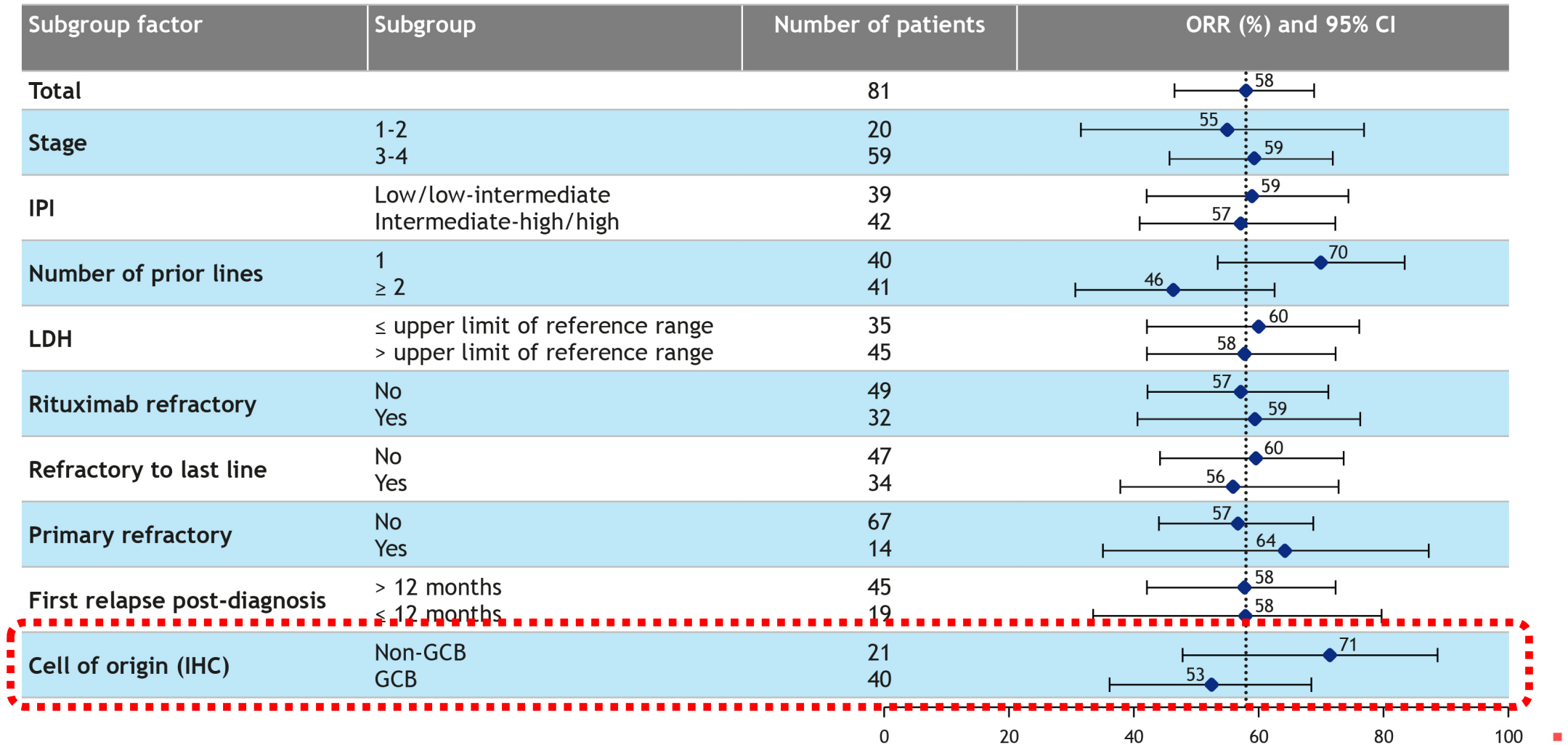
- **ORR 58%, CR rate 33% by investigator assessment**
 - 74% CRs were PET/CT-confirmed
 - 26% CRs were based on CT only
- **Central read indicated comparable ORR**

Non-evaluable patients (NE), n=7 were included in the denominator for ORR assessment: AE (herpes zoster); non-compliance; 3 x death (disease progression, sudden death, respiratory failure); clinical decision; ICF withdrawal

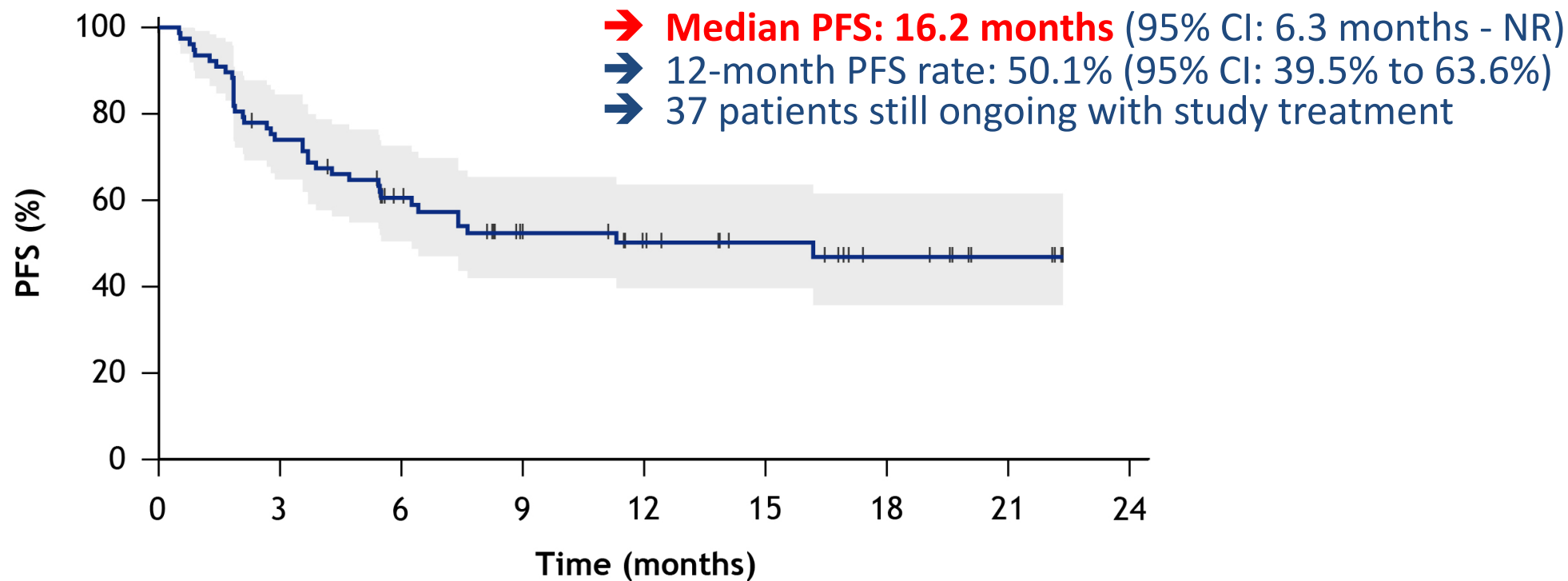
CR, complete response; NE, not evaluable; PD, progressive disease; PR, partial response; SD, stable disease.



Comparable ORR Observed in Most Subgroups of Interest



L-MIND: Progression-free survival

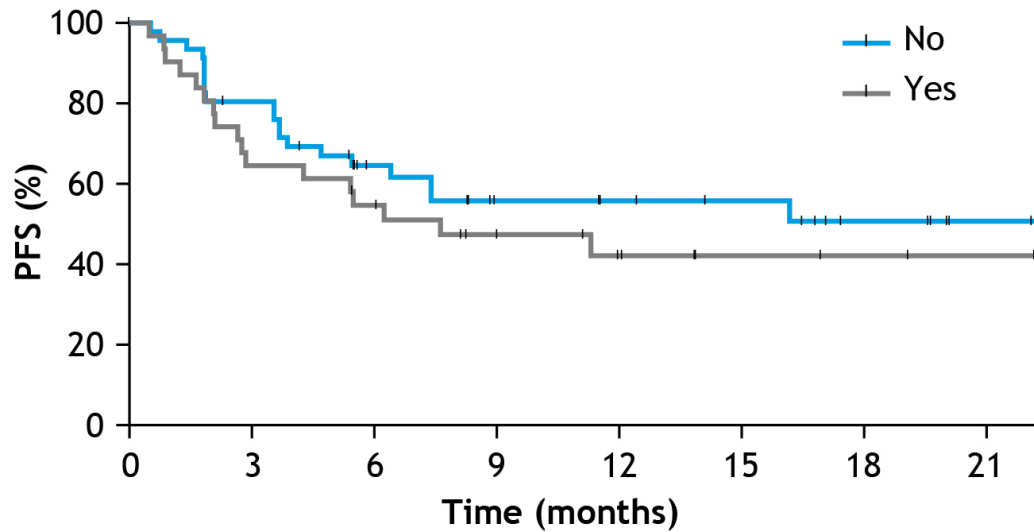


Number of patients at risk	Median PFS	Median Follow-up
PFS 81 56 38 26 20 15 9 4	16.2 months	12 months



L-MIND: PFS According to Response to Prior Therapies

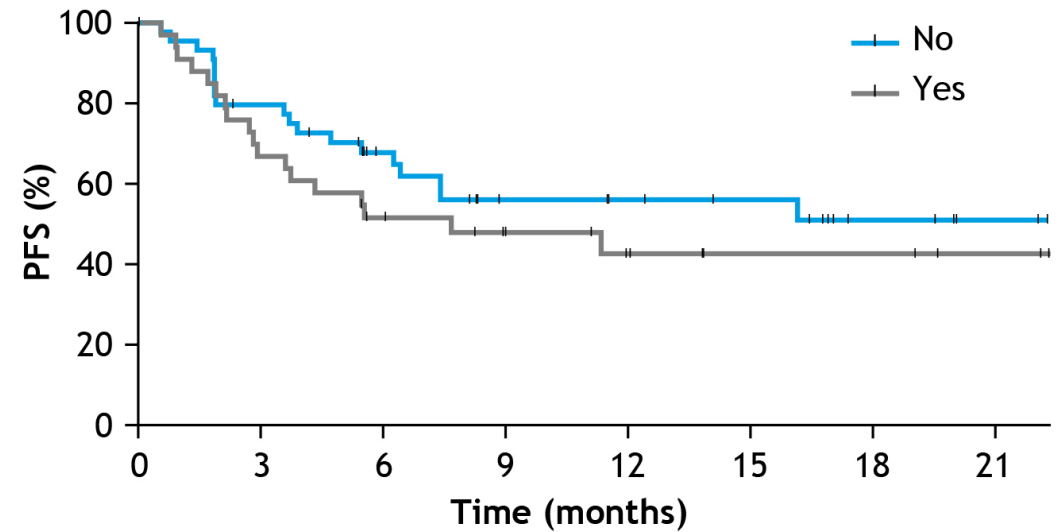
Rituximab refractory



Number of patients at risk

No	49	36	22	15	13	11	6	2
Yes	32	20	16	11	7	4	3	2

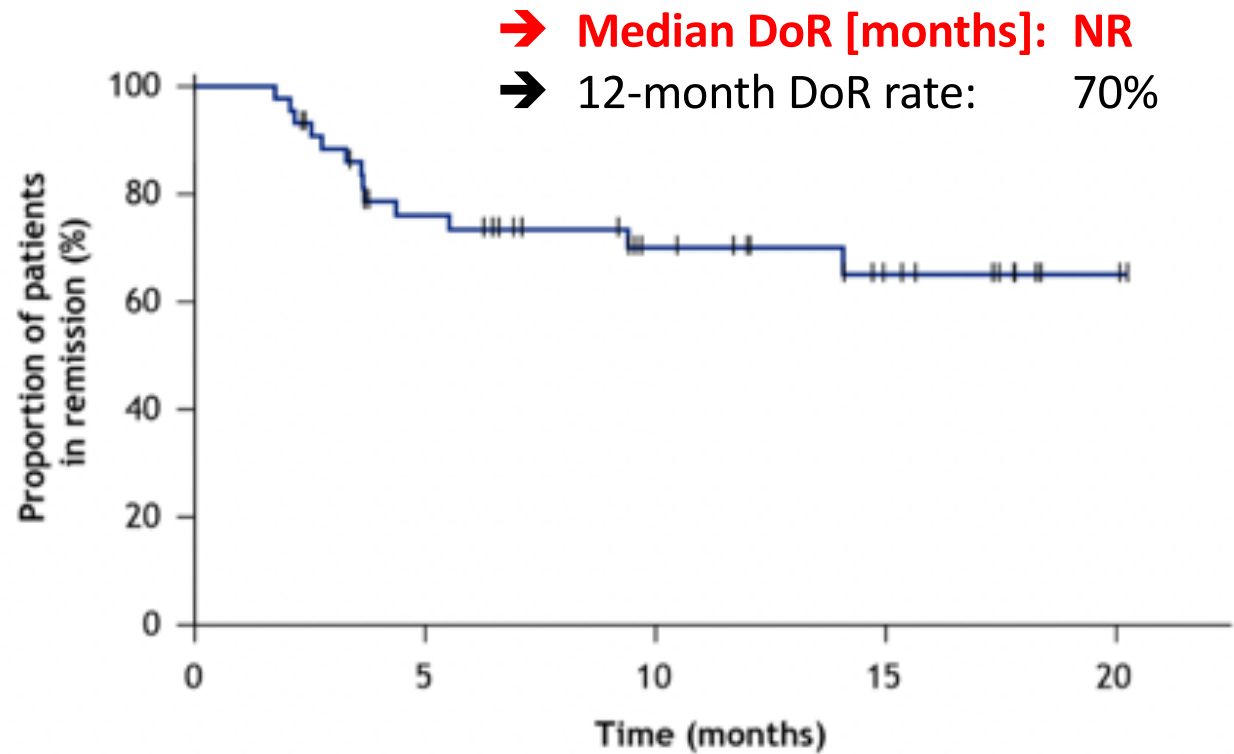
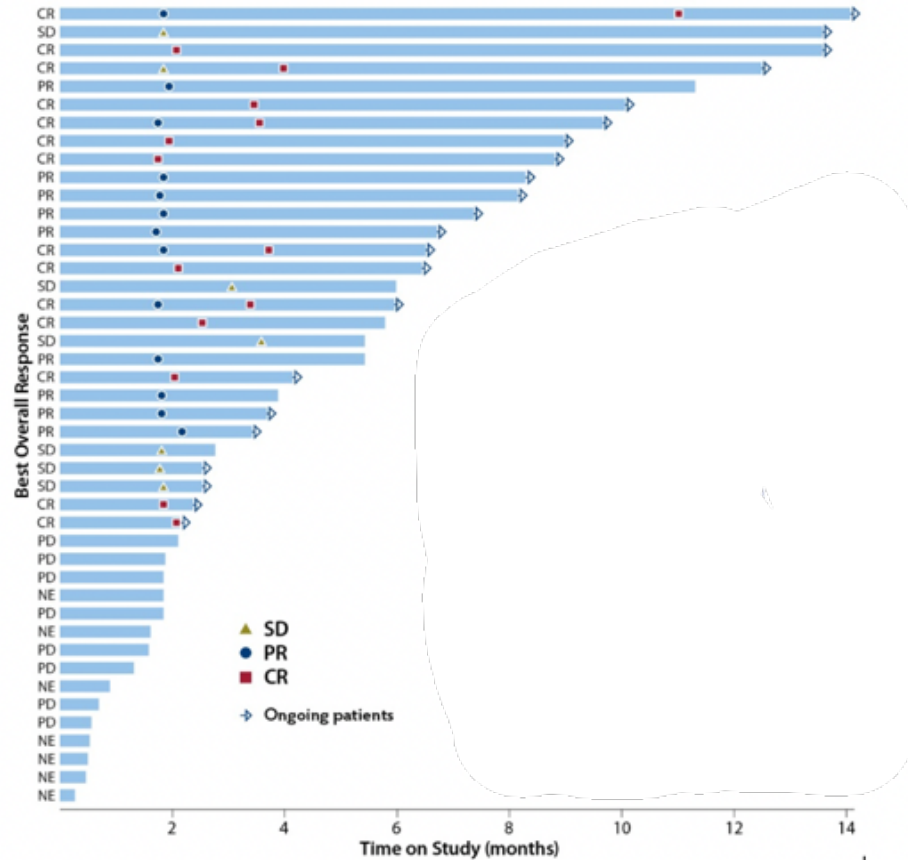
Last treatment refractory



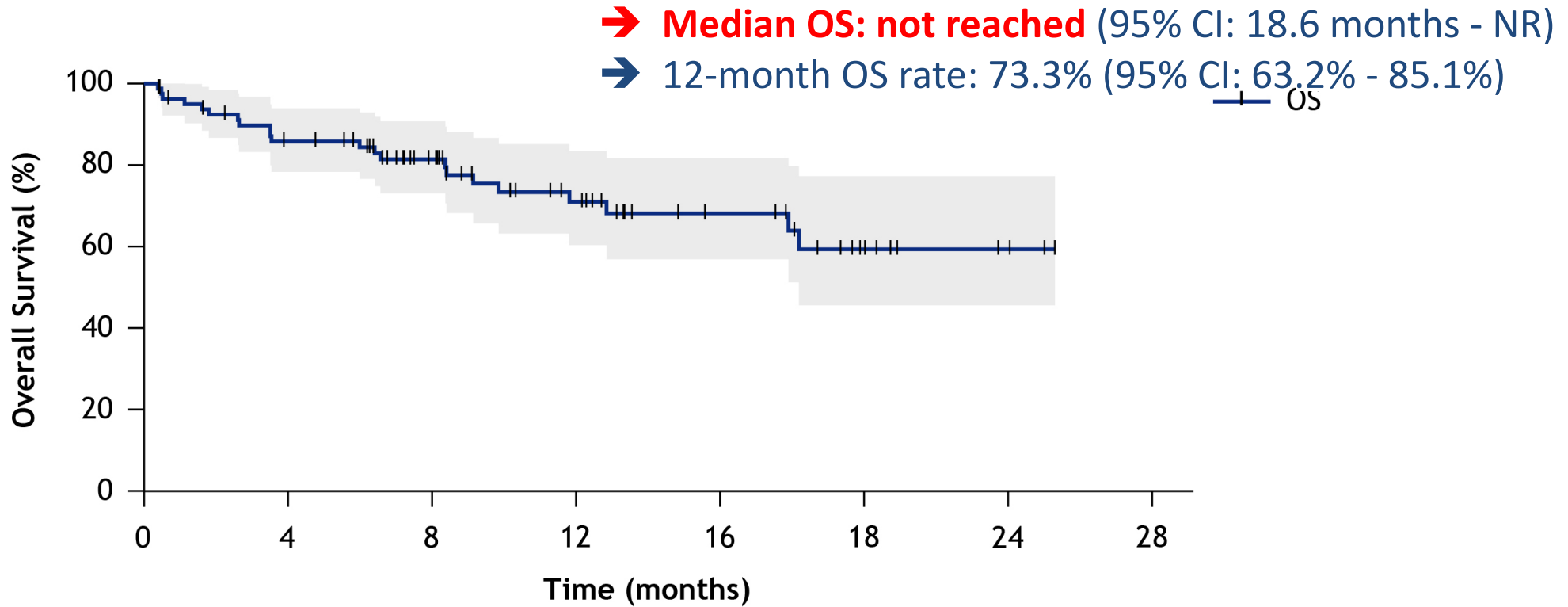
Number of patients at risk

No	47	34	23	15	13	11	5	2
Yes	34	22	15	11	7	4	4	2

L-MIND: Duration of Response



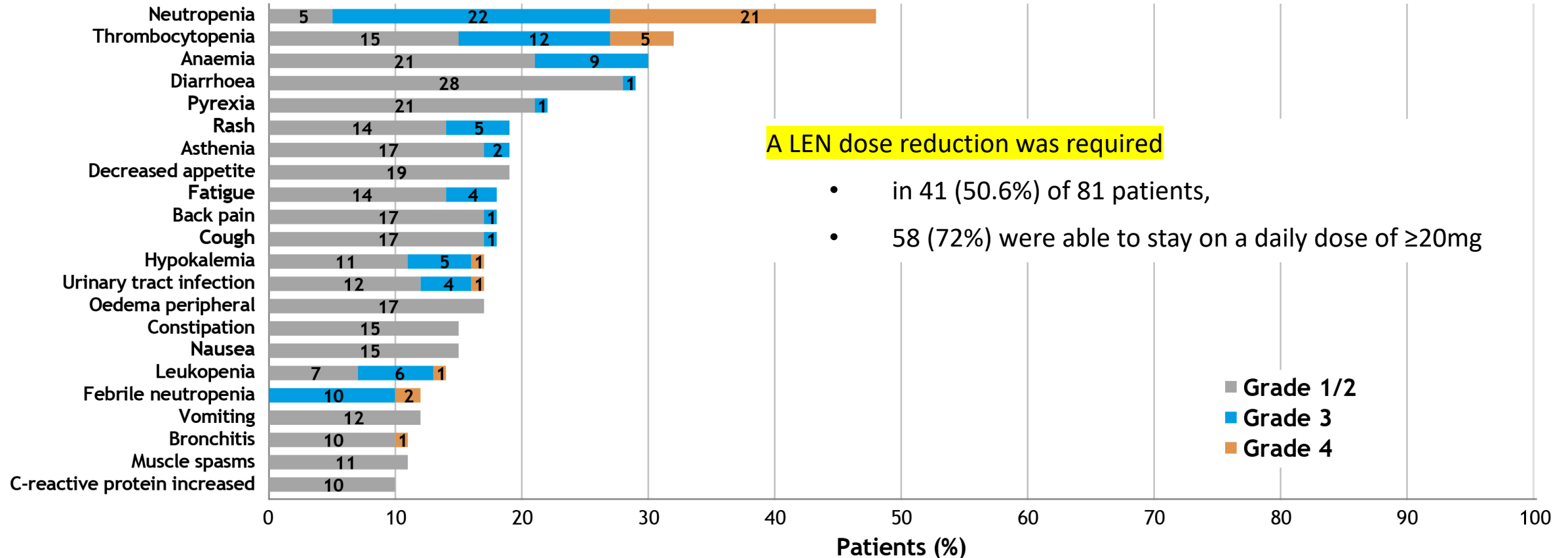
L-MIND: Overall Survival



Number of patients at risk	Median OS	Median Follow-up
OS	NR	12.4 months
81		
64		
47		
31		
18		
11		
5		

L-MIND: Safety Profile

TEAEs occurring in $\geq 10\%$ of patients; n (%) N=81



- No infusion-related reactions were reported for MOR208
- Treatment-related SAEs occurred in 16 (19.8%)** patients (the majority of the events were infections or neutropenic fever)

L-MIND: Conclusions

- MOR208 in combination with LEN showed **encouraging activity** in transplant ineligible, R-R DLBCL patients, who have limited treatment options
- The investigator-assessed **objective response rate was 58% with a complete response rate of 33%**
- This updated preliminary analysis shows a **mPFS of 16 months**, which represents a remarkable result in this patient population
- **Hematological toxicities were manageable**, and MOR208 in combination with LEN was well tolerated without unexpected findings
- Study is ongoing; **primary analysis is expected on EHA**

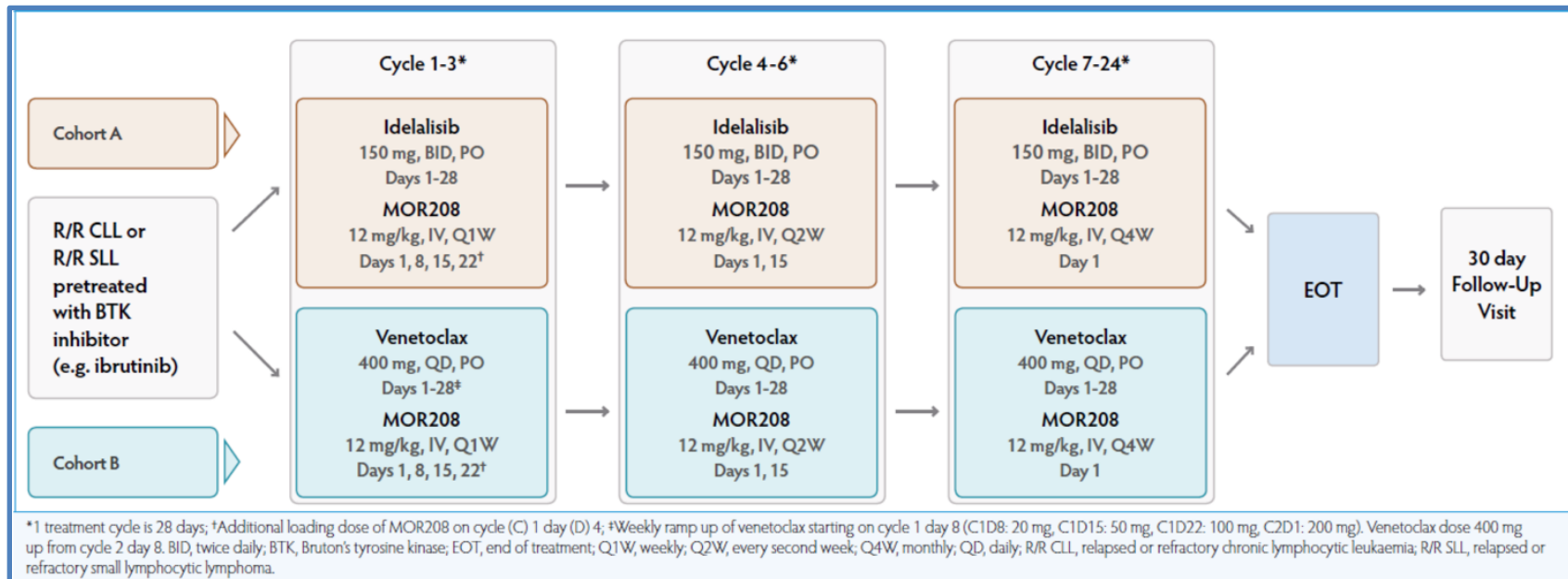
MOR 208 + LEN Promising PFS Compared to Existing and Upcoming Therapies in NTE-R/R DLBCL

	MOR208C201 Jurczak et al, ASH 2016	Witzig et al., 2011	Czuczman et al.,2017	Wang et al., 2013	Morschauer et al, ASH 2016	L-MIND, Data cut-off December 12, 2018
Regimen	MOR208	LEN (in aNHL)	LEN	R + LEN	Obinutuzumab + LEN	MOR208 + LEN
Baseline Characteristics						
Evaluable patient population	R/R DLBCL N=35	R/R DLBCL N=108	R/R DLBCL N=51	R/R DLBCL N=32	R/R DLBCL N=71	R/R DLBCL N=68
Age, median	71	66 (overall)	69	65	70	72
Prior lines, median	2	3 (overall)	2	3	2	2
Refractory, (%)	46%*	44% (overall)	unknown	unknown	70%	40%
Outcome						
Objective response rate	26%	28%	27%	28%	45%	49%
Complete response rate	6%	7%	10%	22%	16%	31%
Median PFS, months	2.7	2.7	3.1	2.8	4.1	16.2 months
Median overall survival, months	-	-	7.1	10.2	-	NR* at med FU

MOR 208 + LEN Promising PFS Compared to Existing and Upcoming Therapies in NTE-R/R DLBCL

	L-MIND Cut-Off Dec.12, 2018	Dang et al., BJH 2017*	Sehn et al., ASH 2017	Pettengel et al., The Lancet, 2012	SCHOLAR-1 Crump et al., Blood, 2017**	ZUMA-1 Locke And Neelapu et al.,ASH, 2017
Regimen	MOR208 + LEN	R + bendamustine	polatuzumab + R + bendamustine	pixantrone	Salvage chemotherapies and radiation	axi-cel
Phase	2	3	2	3	Retrospective study	2
Evaluable patient population	R/R DLBCL n=68	R/R DLBCL n=137	R/R DLBCL n=40	R/R DLBCL n=104	Refractory DLBCL n=635	Refractory DLBCL n=108
Best ORR	49%	49%	70%	37%	26%	82%
Best CR	31%	18%	58%	11.4%	8%	58%
Median PFS, months	16.2 months	3.7	6.7	5	n/a	5.9
Median overall survival, months	NR*** at med FU	9.5	11.8	7.5	6.6	NR

Two-cohort, phase II study in R/R CLL (COSMOS)



Primary endpoint - AE

Secondary endpoints

- ORR
- Anti-MOR208 Ab form.
- Pharmacokinetics

Exploratory endpoints

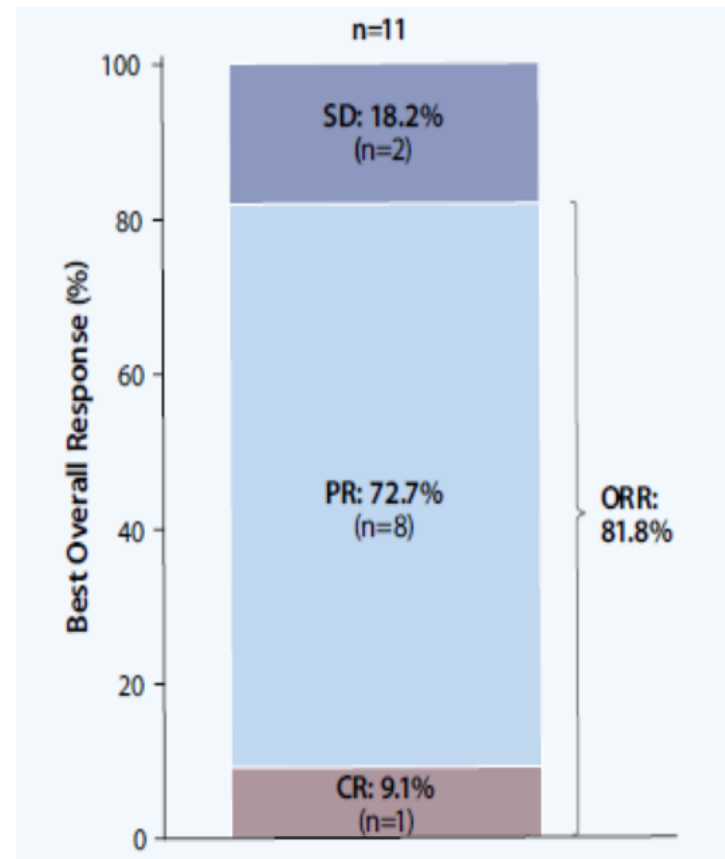
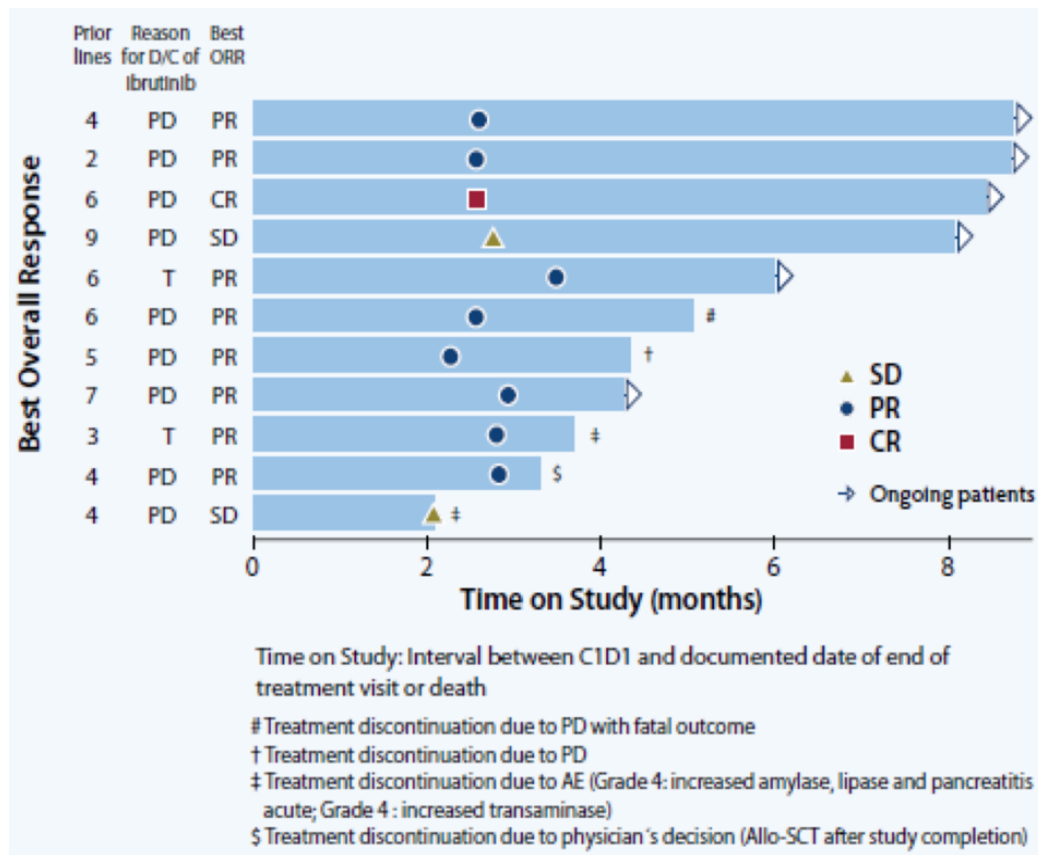
- Analysis of biomarkers

MOR208 + Idelalisib, phase II study in R/R CLL (COSMOS)

- Median time from CLL diagnosis to first study dose of MOR208+IDE was **7.2 years** (range: 3.7 to 23.7 years)
- Pts were heavily pre-treated with a **median of 5 prior lines of therapy** (range: 2-9)
- **9 pts (82%) discontinued prior ibrutinib treatment due to PD** and 2 pts (18%) due to toxicity. Median time from last BTKi intake to first study
- Dose of MOR208+IDE was 30 days (range: 5 to 236 days)

Characteristic	Specification	n (%), N=11 patients
Del17p* or TP53 mutation*	No lesion	1 (9.1)
	Deletion and/or mutation	7 (63.6)
	Unknown	3 (27.3)
IGVH status*	No mutation	7 (63.6)
	Mutation	1 (9.1)
	Unknown	3 (27.3)
BTK status*	No mutation	0 (0)
	Mutation	5 (45.5)
	Unknown	6 (54.4)
PLCy status*	No mutation	0 (0)
	Mutation	3 (27.3)
	Unknown	8 (72.7)
Prior treatment	Ibrutinib	11 (100)
	FCR (CIT)	8 (72.7)
	CT/CIT other than FCR	9 (81.8)
	Anti-CD20 mAb	11 (100)
	Rituximab	10 (90.9)
	Ofatumumab	1 (9.1)
	Allogeneic SCT	1 (9.1)
	Autologous SCT	2 (18.2)
	Venetoclax	1 (9.1)
	Alemtuzumab	2 (18.2)

MOR208 + Idelalisib, phase II study in R/R CLL (COSMOS)



- The median observation time at cut off was **4.2 months**
- Investigator assessed **ORR was 82% including 1 CR (9%)** confirmed by bone marrow biopsy and 8 PR (73%)
- Two pts had PD, one of them resulted in fatal cardiorespiratory failure.
- Treatment of 6 pts is ongoing

MOR208 + Venetoclax, phase II study in R/R CLL (COSMOS)

- Pts were heavily pre-treated with a **median of 3 prior lines of therapy** (range: 1-4)
- **9 pts (69%) discontinued prior ibrutinib treatment due to PD** and 3 pts (23%) due to toxicity.

IGHV status	Not mutated	9 (69) [†]
	Mutated	2 (15) [‡]
	Unknown	2 (15) [#]
Del17p or TP53 mutation	No lesion	8 (62)
	Deletion or mutation	5 (38)
BTK status	No mutation	11 (85)
	Mutation	2 (15)
PLCG2 status	No mutation	10 (77)
	Mutation	3 (23)

- Treatment of 10/13 pts is ongoing
- **7/13 (54%)** pts had at least 1 post-baseline assessment of tumor response on C4D1; all had a **partial response (PR)** based on local investigator assessment.

AE in phase II study in R/R CLL (COSMOS)

Preferred Term	n (%), N=11			
	TEAEs (≥2 pts)		SAEs (any)	
	All Grades	Grade ≥3	All Grades	Grade ≥3
Hematological				
Neutropenia	5 (45)	4 (36)	0	0
Anaemia	5 (45)	3 (27)	1 (9)	1 (9)
Thrombocytopenia	2 (18)	2 (18)	1 (9)	1 (9)
Pancytopenia	n.a	n.a	1 (9)	0
Non-Hematological				
Dyspnea	5 (45)	1 (9)	0	0
Pyrexia	5 (45)	0	0	0
Infusion related reaction	4 (36)	0	0	0
Cough	3 (27)	0	0	0
Amylase increased	2 (18)	2 (18)	0	0
ALT increased	2 (18)	1 (9)	0	0
Bronchitis	2 (18)	1 (9)	1 (9)	1 (9)
Hypertension	2 (18)	1 (9)	0	0
Cytomegalovirus infection	2 (18)	0	0	0

Preferred term; n (%), N=13	TEAEs*		SAEs**	
	Any grade	Grade 3	Any grade	Grade 3
Hematological				
Neutropenia	5 (38)	3 (23)	0	0
Anemia	3 (23)	1 (8)	1 (8)	1 (8)
Leukopenia	3 (23)	1 (8)	0	0
Non-hematological				
Infusion-related reaction	7 (54)	1 (8)	2 (15)	1 (8)
Hyperuricemia	5 (38)	1 (8)	0	0
Nausea	5 (38)	0	0	0
Hypophosphatemia	4 (31)	4 (31)	0	0
LDH increased	4 (31)	0	0	0
Vomiting	3 (23)	0	0	0
Dyspnea	3 (23)	0	0	0
Weight increased	3 (23)	0	0	0
Troponin T increased	3 (23)	0	0	0
Hyperglycemia	3 (23)	0	0	0
Hypocalcaemia	3 (23)	0	0	0
Hypokalemia	3 (23)	0	0	0

MOR208 - Summary

MOR208 Monotherapy in R/R NHL

- **ORR: 26%** in DLBCL and 29% in iNHL, **12 month PFS rate: 39%** in DLBCL and iNHL
- Target lesion shrinkage also observed in patients with stable disease
- Efficacious in **rituximab-refractory** disease, particularly effective in pts with adequate NK count
- **Longe responses:** five iNHL and one DLBCL patient are on treatment for more than 4 years
- **Well tolerated**, also in long-term treatment

MOR208 – LEN in R/R DLBCL

- **ORR: 58,5%, 33% CR** in R/R DLBCL
- **Median PFS rate – 16.8 months, 12-month PFS rate: 50.1%**
- **Well tolerated**, also in long-term treatment

MOR208 = Idelalisib in R/R CLL

- **Idelalisib → ORR: 81.8%, 9.8% CR** in R/R CLL
- **Well tolerated**, short follow-up



We deeply thank the patients, families, clinical researchers, hospitals, and clinics that participate in clinical trials testing the MOR208 drug candidate.

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