# Studi RE-MIND e RE-MIND2

## Antonello Pinto

Dipartimento di Ematologia e Terapie Innovative Istituto Nazionale Tumori, Fondazione 'G. Pascale' IRCCS, Napoli



**Eppur si muove...** | La terapia nel MONDO LINFOMI

Real-world data in drug development strategies for orphan drugs: Tafasitamab in B-cell lymphoma, a case study for an approval based on a single-arm combination trial

Philippe Serrano <sup>a</sup>,<sup>\*</sup>, Hiu Wah Yuen <sup>a</sup>, Julia Akdemir <sup>a</sup>, Markus Hartmann <sup>b</sup>, Tatjana Reinholz <sup>a</sup>, Sylvie Peltier <sup>c</sup>, Tanja Ligensa <sup>a</sup>, Claudia Seiller <sup>a</sup>, Achta Paraiso Le Bourhis <sup>d</sup>

Tafasitamab (TAF) plus lenalidomide (LEN) is a novel treatment option for patients with relapsed/ refractory diffuse large B-cell lymphoma (rrDLBCL) who are not eligible for autologous stem cell transplantation. The initial US/EU approvals for TAF represent precedents because this is the first time that approval of a novel combination therapy was granted based on a pivotal single-arm trial (SAT). Matching real-world data (RWD) helped to disentangle the contribution of individual agents. In this review, we present the TAF development strategy, the prospective incorporation of RWD within the clinical development plan, the corresponding regulatory hurdles of this strategy, and the prior regulatory actions for other cancer drugs that previously incorporated RWD and propensity score matching in EU and US regulatory submissions. We also outline how RWD could further advance and impact orphan drug development.

1359-6446/© 2022 Elsevier Ltd. All rights reserved. https://doi.org/10.1016/j.drudis.2022.02.017

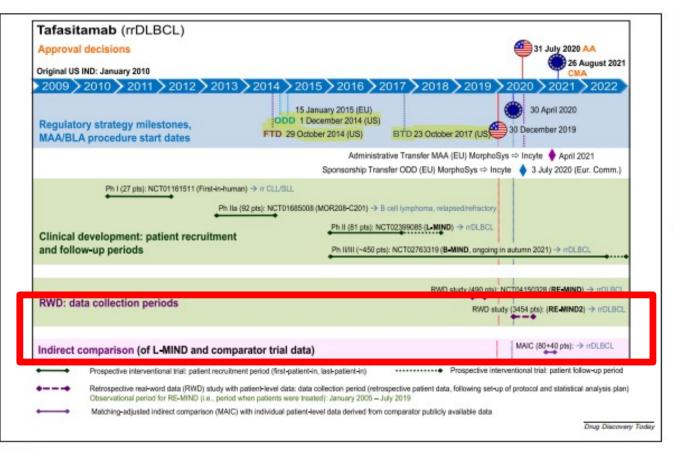
www.drugdiscoverytoday.com 1

Please cite this article in press as: P. Serrano et al., Drug Discovery Today (2022), https://doi.org/10.1016/j.drudis.2022.02.017

#### ROMA, 26 MAGGIO 2022

TAFA-LENA: This is the first time that approval of a novel combination therapy was granted based on a pivotal single-arm trial (SAT)

- **RE-MIND:** to establish the effectiveness of LEN and the contribution of the two combination partners not previously approved in r/r DLBCL to the overall effect
- **RE-MIND2:** to characterize the effectiveness of tafasitamab + LEN in a real-world setting



#### FIGURE 1

Regulatory strategy milestones, clinical trial recruitment periods and supporting real-world data (RWD) studies of tafasitamab. Abbreviations: AA, accelerated approval (US); BLA, biological license application (US); BTD, breakthrough therapy designation (US); CMA; conditional marketing authorization (EU); Eur Comm, European Commission; FTD, fast-track designation (US); IND, investigational new drug (designation); MAA, marketing authorization application (EU); MAIC, matching-adjusted indirect comparison; ODD, orphan drug designation; pts, patients; rrCLL/SLL, relapsed/refractory chronic lymphatic leukemia/small lymphocytic lymphoma; rrDLBCL, relapsed/refractory diffuse large B cell lymphoma.

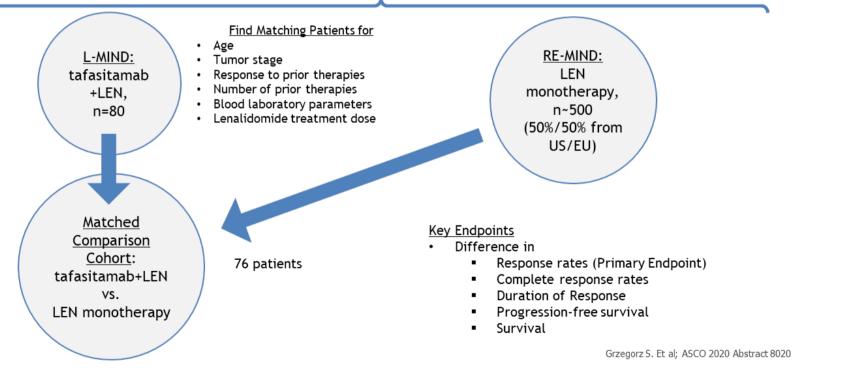
#### ROMA, 26 MAGGIO 2022

**RE-MIND**: COMPARING TAFASITAMAB + LENALIDOMIDE (L-MIND) WITH A REAL-WORLD LENALIDOMIDE MONOTHERAPY COHORT IN RELAPSED OR REFRACTORY DIFFUSE LARGE B-CELL LYMPHOMA

**RE-MIND: PROSPECTIVE-RETROSPECTIVE OBSERVATIONAL STUDY OF LEN MONOTHERAPY AS COMPARATOR TO L-MIND** 

### Aligned Inclusion/Exclusion Criteria

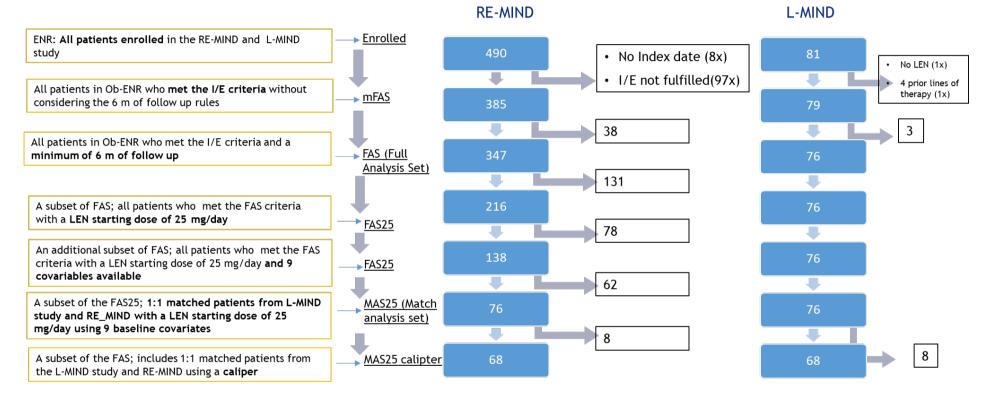
Same histologies, 1-3 prior systemic therapies, not eligible for ASCT



Zinzani PL. et al. Clin Cancer Res. 2021;27(22):6124-6134. doi:10.1158/1078-0432.CCR-21-1471

#### ROMA, 26 MAGGIO 2022

#### ANALYSIS POPULATIONS I



Fas, full analysis set; MAS, matched analysis set, Cal, caliper

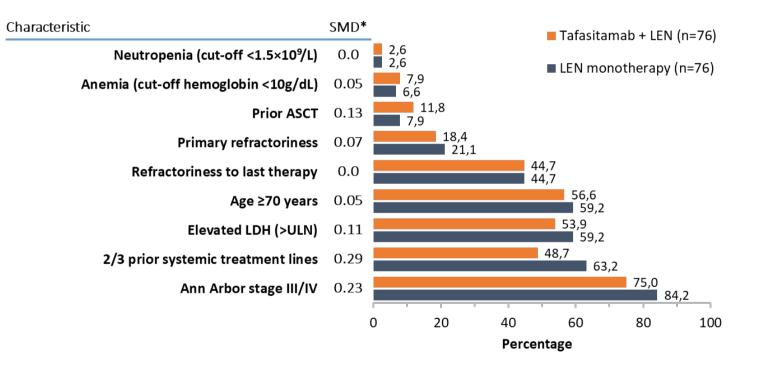
\*Matched Analysis Set 25 using caliper; a subset of the FA525 and includes 1:1 matched patients from the L-MIND study and the observational cohort with a LEN starting dose of 25 mg/day using a caliper, standardized mean difference (SMD) <0.20

Zinzani et al, Journal of Cancer Research and Clinical Oncology 2020

#### FULL ANALYSIS SET (FAS) MATCHING ANALYIS SET (MAS)

# BASELINE CHARACTERISTICS USED FOR COHORT BALANCING

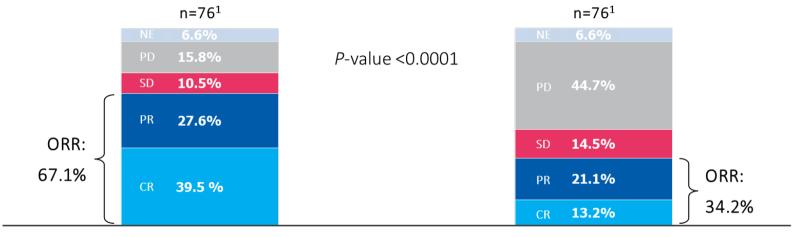
• Baseline characteristics were well balanced across the two cohorts after the matching procedure



\*SMD is defined as the ratio of the difference of proportions of a baseline characteristic to the standard deviation of the pooled difference. This standardisation allows for comparison of the relative balance achieved across different baseline characteristics occurring in a low or high proportion. ASCT, autologous stem cell transplantation; LDH, lactate dehydrogenase; LEN, lenalidomide; SMD, standardised mean difference; ULN, upper limit of normal.

Nowakowski G, et al. Poster presentation at ASCO 2020; Abstract 8020.

# ORR AND CR RATE



Tafasitamab + LEN

LEN monotherapy

Endpoint/cohort	Tafasitamab + LEN (L-MIND cohort) (n=76 <sup>1</sup> )	LEN monotherapy (observational cohort) (n=76 <sup>1</sup> )
ORR (%, 95% CI)	67.1 (55.4–77.5)	34.2 (23.7–46.0)
Odds ratio (95% CI)	3.9 (1.9–	8.1); <i>P&lt;</i> 0.0001
CR (%, 95% CI)	39.5 (28.4–51.4)	13.2 (6.5–22.9)

Investigator assessed (IRC-assessed ORR for tafasitamab + LEN in L-MIND was 57.5%<sup>2</sup>).

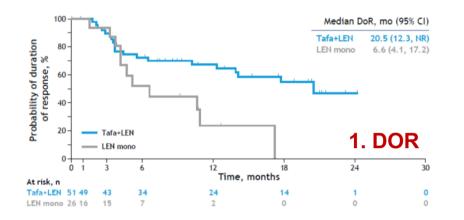
Cl, confidence interval; CR, complete response; IRC, independent review committee; LEN, lenalidomide; NE, not evaluated;

ORR, overall response rate; PD, progressive disease; PR, partial response; SD, stable disease.

1. Nowakowski G, et al. Poster presentation at ASCO 2020; Abstract 8020; 2. Duell J, et al. Oral presentation at Virtual ICML 2021; Abstract 28.

#### ROMA, 26 MAGGIO 2022

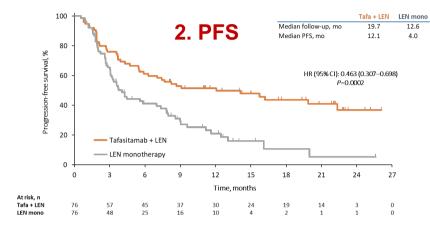
# **2nd.ry endpoints**



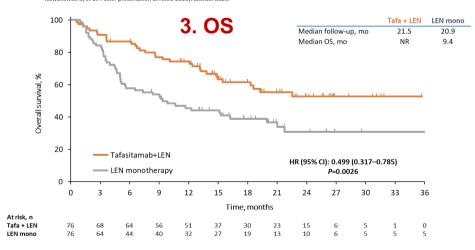
CI, confidence interval; DoR, duration of response; LEN, lenalidomide; MAS25, matched analysis set

25; mo, month; NR, not reached

Median DoR was 20.5 (95% CI: 12.3, NE) months in the tafasitamab+LEN cohort and 6.6 (95% CI: 4.1, 17.2) months in the LEN-mono cohort.



Cl, confidence interval; HR, hazard ratio; LEN, lenalidomide; mo, month(s); mono, monotherapy; NR, not reached; PFS, progression-free survival. Nowakowski, G: et al. Poster presentation at ASCO 2020: Abstract 8020.



CI, confidence interval; HR, hazard ratio; LEN, lenalidomide; mo, month(s); mono, monotherapy; NR, not reached; OS, overall survival. Nowakowski G, et al. Poster presentation at ASCO 2020; Abstract 8020.

Eppur si n	nuove	La terapia n	el MONDO LINFOMI		Roma, <b>26</b>	MAGGIO 2022
SUM	MA	ΛRΥ	Historical patient's level cohort study	Observation stud		Historical pooled analysis from 2 Phase III CT and 3 observational studies
		L-MIND (n 81)	RE-MIND (n 76)	Broccoli et al (n 153)	Mondello et al (n 123)	SCHOLAR trial (n 636)
		Tafa + Lena	Tafa+lena vs Lena	Lena	Lena	r/r therapies
	ORR	59%	67% vs 34%	29%	37%	26%
	CR	41%	39% vs 12%	23%	21%	7%
	PR	17%	27% vs 22%	6%	16%	18%
	mOS	31.6m	NR vs 9.4m	12m	Not reported	6.3m

SΙ

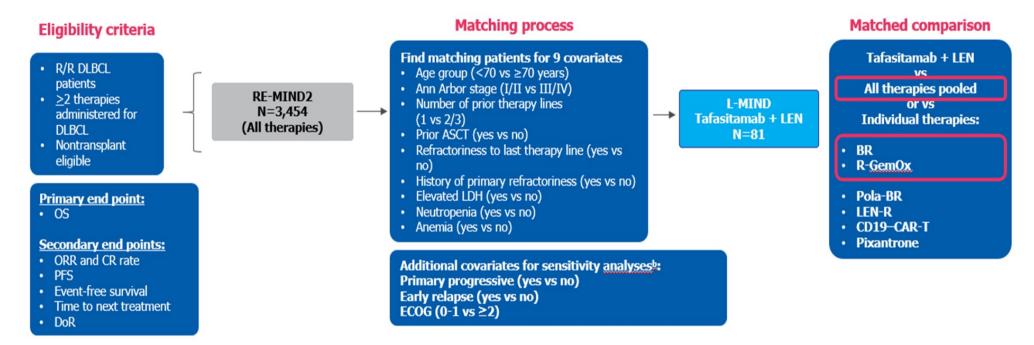
Salles et al, Lancet Onc 2020 Salles G et al. EHA. 2020; Abstract EP1201 Crump et al, Blood 2017 Broccoli et al, The Oncologist 2019 Mondello et al, The Honcologist 2016

# CONCLUSIONS

- Significantly better ORR, CR and OS outcomes indicate substantial additional activity for the novel combination of tafasitamab + LEN versus LEN monotherapy in transplant-ineligible R/R DLBCL patients
- All time-to-event endpoints supported the primary analysis results and were in line with the overall result
- The differences in the primary and secondary endpoints are clinically meaningful
- All sensitivity analyses demonstrate that the results obtained in the primary analysis are robust
- Within the limitations of non-randomised trials, ePS-based 1:1 matching allows for a robust estimation of the additional treatment effect attributable to tafasitamab when added to LEN as in the L-MIND trial
- RE-MIND outcomes are comparable to those published for LEN monotherapy in clinical trials

ROMA, 26 MAGGIO 2022

**RE-MIND2** is a retrospective, observational cohort study designed to generate a real-world control for outcomes from the L-MIND study, to characterize the effectiveness of tafasitamab + LEN, in a real-world setting, relative to commonly administered systemic therapies for ASCT ineligible patients with R/R DLBCL



**MATCHING ANALYIS SET (MAS).** Matching criteria and estimated propensity score (ePS)-based method were applied and efficacy outcomes from the L-MIND cohort were compared with those treated with the observational cohort of patients enrolled in RE-MIND2 database

#### ROMA, 26 MAGGIO 2022

# **RE-MIND2: POPULATION**

**FAS population**: patients who met the eligible/non-eligible criteria of RE-MIND2 and L-MIND study with a minimum of 6 months follow-up

FAS\_elig population: patients who were eligible for matching

**MAS\_Pool population**: 1:1 matched patients from the L-MIND study and the observational cohort using baseline covariates.

	T-L vs pooled therapies	T-L vs BR	T-L vs R-GEMOX
m follow up in matched cohorts	31.84m vs 33.25m	32.92 vs 25.00	32.92 vs 33.18

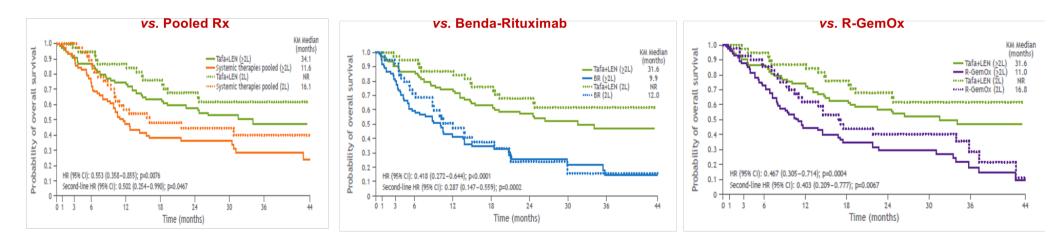
Systemic Therapies Tafasitamab Pooled +LEN BR R-GemOx N=3,454 N=3,454 N=3,454 N=81 Enrolled Excluded Excluded Excluded N=444 N-2,975 N=3,008 FAS\* N=3,010 N=479 N=446 N=76 FAS\_BR\* FAS\_R-GemOx" Matching Matching Matching criteria criteria criteria not met not met not met N=2,049 N=197 N=211 FAS\_elig! FAS\_elig\_BR1 N=282 N=235 N=76 N=961 FAS\_elig\_R-GemOx<sup>®</sup> Not matched Not Not matched matched N-885 N-207 N-161 MAS\_Pool N=76 N=76 N=75 N=74 Pooled MAS BR N=75 BR R-GemOx N=74 MAS\_R-GemOx=

Figure 2. Number of patients analyzed per MAS

Grzegorz S. Nowakowski et al, SOHO September 8-11, 2021: Poster number ABCL-346

# **RE-MIND2: OVERALL SURVIVAL**

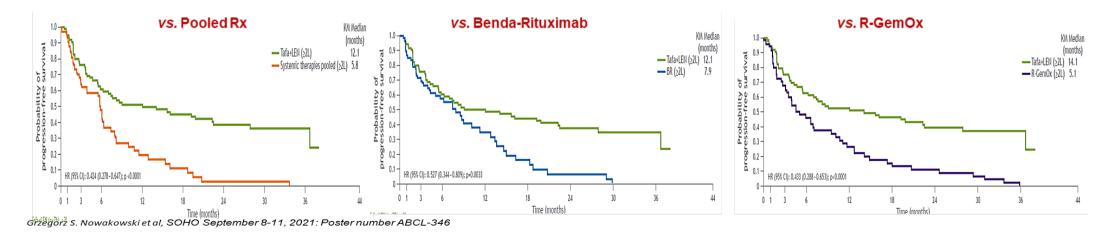
	Pooled therapies ≥2L (m)	Tafa-Lena ≥2L (m)	BR ≥2L (m)	Tafa-Lena ≥2L (m)	R- GEMOX ≥2L (m)	Tafa-Lena ≥2L (m)	Pooled therapies 2L (m)	Tafa-Lena 2L (m)	BR 2L (m)	Tafa-Lena 2L (m)	R-GEMOX 2L (m)	Tafa-Lena 2L (m)
mOS	11.6	34.1	9.9	31.6	11.0	31.6	16.1	NR	12.0	NR	16.8	NR
HR (95% Cl)	0.5 (0.358-		-	).418 72-0.644)	-	.467 5-0.714)	0.502 (0.254-0.99	90)		).287 17-0.559)		403 1-0.777)
p value	0.00	)76	<(	0.0001	0.	0004	0.0467		0	.0002	0.0	067



Grzegorz S. Nowakowski et al, SOHO September 8-11, 2021: Poster number ABCL-346

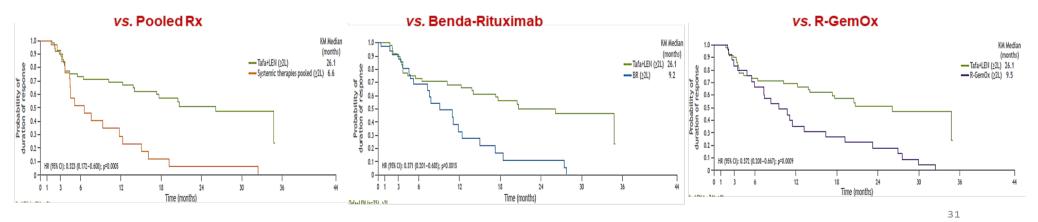
# **RE-MIND2:** PROGRESSION FREE SURVIVAL

	Pooled therapies ≥2L (m)	Tafa-Lena ≥2L (m)	BR ≥2L (m)	Tafa-Lena ≥2L (m)	R- GEMOX ≥2L (m)	Tafa-Lena ≥2L (m)	Pooled therapies 2L (m)	Tafa-Lena 2L (m)	BR 2L (m)	Tafa-Lena 2L (m)	R-GEMOX 2L (m)	Tafa-Lena 2L (m)
mPFS	5.8	12.1	7.9	12.1	5.1	14.1	8.0	16.2	8.8	16.2	7.1	16.2
HR (95% CI)	0.4 (0.278-			.527 4-0.809)		433 3-0.653)	0.452 (Not report	ed)	1	).475 reported)		466 eported)
p value	<0.0	001	0.	0033	0.0	0001	0.0081		0	.0155	0.0	)096



# **RE-MIND2: DURATION OF RESPONSE**

	Pooled therapies ≥2L (m)	Tafa-Lena ≥2L (m)	BR ≥2L (m)	Tafa-Lena ≥2L (m)	R-GEMOX ≥2L (m)	Tafa-Lena ≥2L (m)
mDoR	6.6	26.1	9.2	26.1	9.5	26.1
HR	0.3	0.323		0.371		0.372
p value	0.0	05	0	0.0015		0.0009



Grzegorz S. Nowakowski et al, SOHO September 8-11, 2021: Poster number ABCL-346

# RE-MIND2: conclusion (1/2)

Results from the present study align with data reported from previous studies on BR and R-GemOx

Table 3. Overview of BR and R-GemOx results reported in literature vs RE-MIND2 study

		Key stu	idies with	BR	Key studies with R-GemOx						
		ature-rep outcomes		RE-MIND2	l	RE-MIND2					
Reference:	12	13	8	outcomes	14	9	15	16	outcomes		
Ν	59	59	40	75	49	196	32	46	74		
ORR, %	62.7	45.8	25	54.7	61	38	78	83	45.9		
CR, %	37.3	15.3	22.5	28.0	44	33	50	50	23.0		
mPFS, months	6.7	3.6	3.7	7.9	5	5	NA	NA	5.1		
mOS, months	NA	NA	4.7	9.9	11	10	NA	NA	11.0		

8. Sehn LH, et al. J Clin Oncol 2019;38(2):155-65; 9. Cazelles C, et al. Leuk Lymphoma 2021;25; 12. Ohmachi K, et al. J Clin Oncol 2013;312103-9; 13. Vacirca JL, et al. Ann Hematol 2014;93(3):403-9; 14. Mounier N, et al. Haematologica 2013;98(11):1726-31; 15. Corazzelli G, et al. Cancer Chemother Pharmacol 2009;64(5):907-16;: 16. El Gnaoui T, et al. Ann Oncol 2007;18(8):1363-8

18.5

# RE-MIND2: CONCLUSION (2/2)

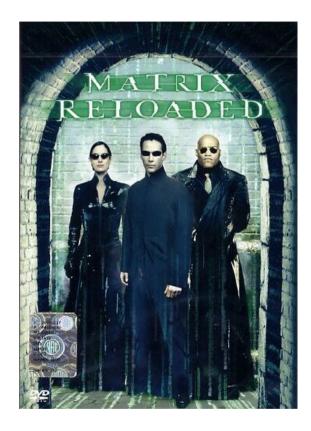
RE-MIND2 was designed to generate a real-world control for outcomes from the L-MIND study to characterize the effectiveness of tafasitamab + LEN relative to other systemic therapies, currently recommended for the treatment of ASCT in eligible patients with R/R DLBCL, using a 1:1 NN ePS-based matching method

Tafasitamab + LEN was associated with longer OS vs systemic therapies pooled, BR, and R-GemOx with an HR of 0.553, 0.418, and 0.467, respectively

Overall, results of this study show that this immunomodulatory regimen may improve outcomes compared with NCCN/ESMO-recommended therapies used in routine clinical care for the treatment of R/R DLBCL

As large randomized trials in R/R DLBCL are limited, real-world data can be used to compare efficacy in welldesigned studies with matching for multiple covariates

#### ROMA, 26 MAGGIO 2022



Tafasitamab plus lenalidomide versus Pola-BR, R2, and CAR-T: comparing outcomes from RE-MIND2, an observational, retrospective cohort study in relapsed/refractory diffuse large B-cell lymphoma

<u>Grzegorz S. Nowakowski</u>,<sup>1</sup><sup>\*</sup> Dok Hyun Yoon,<sup>2</sup> Patrizia Mondello,<sup>3</sup> Erel Joffe,<sup>3</sup> Anthea Peters,<sup>4</sup> Isabelle Fleury,<sup>5</sup> Richard Greil,<sup>6</sup> Matthew Ku,<sup>7</sup> Reinhard Marks,<sup>8</sup> Kibum Kim,<sup>9</sup> Pier Luigi Zinzani,<sup>10</sup> Judith Trotman,<sup>11</sup> Lorenzo Sabatelli,<sup>12</sup> Dan Huang,<sup>13</sup> Eva E. Waltl,<sup>13</sup> Mark Winderlich,<sup>13</sup> Sumeet Ambarkhane,<sup>13†</sup> Nuwan C. Kurukulasuriya,<sup>14</sup> Raul Cordoba,<sup>15</sup> Georg Hess,<sup>16</sup> Gilles Salles<sup>3</sup>

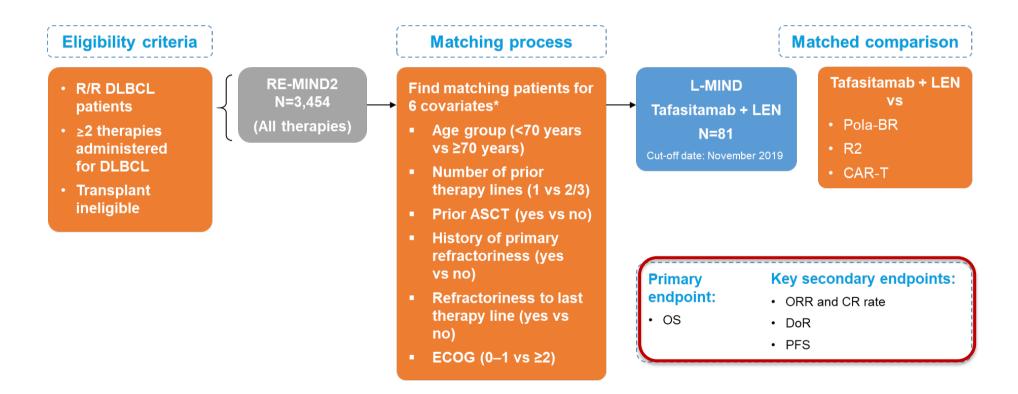
<sup>1</sup>Division of Hematology, Mayo Clinic, Rochester, MN, USA, <sup>2</sup>Department of Oncology, Asan Medical Center, Songpa-gu, Seoul, South Korea, <sup>3</sup>Department of Medicine, Memorial Sloan Kettering Cancer Center, New York, NY, USA, <sup>4</sup>Department of Oncology, University of Alberta, Edmonton, Alberta, Canada,<sup>5</sup>Maisonneuve-Rosemont Hospital, Institute of Hematology, Oncology and Cell Therapy, Montreal University, Montreal, Canada, <sup>6</sup>Paracelsus Medical University Salzburg, Salzburg Cancer Research Institute-CCCIT, and Cancer Cluster Salzburg, Austria, <sup>7</sup>Department of Haematology, St Vincent's Hospital and University of Melbourne, Melbourne, Victoria, Australia, <sup>6</sup>University Hospital Freiburg Internal Medicine I, Freiburg im Breisgau, Germany,

 <sup>9</sup>University of Utah, Salt Lake City, UT & University of Illinois at Chicago, Chicago, IL USA; <sup>10</sup>IRCCS Azienda Ospedaliero-Universitaria di Bologna, Istituto di Ematologia "Seràgnoli" & Dipartimento di Medicina Specialistica, Diagnostica e Sperimentale Università di Bologna, Bologna, Italy; <sup>11</sup>Haematology Department, Concord Repatriation General Hospital, University of Sydney, Concord, NSW, Australia, <sup>12</sup>Incyte Biosciences International Sàrl, Morges, Switzerland, <sup>13</sup>MorphoSys AG, Planegg, Germany,
 <sup>14</sup>MorphoSys AG, Boston, MA, USA, <sup>15</sup>Department of Hematology, Fundacion Jimenez Diaz University Hospital, Health Research Institute IIS-FJD, Madrid, Spain, <sup>16</sup>Department of Hematology, Oncology and Pneumology, University Medical Center, Johannes Gutenberg-University Mainz, Germany.

ASH 2021

**RE-MIND2** expanded analysis study

## RE-MIND2 expanded analysis study design



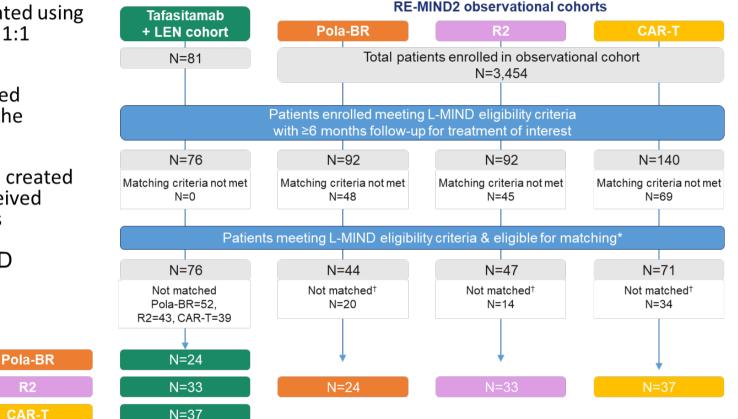
\* 9 covariates were used for the primary analysis; ASCT, autologous stem cell transplant; CAR-T, CD19 chimeric antigen receptor T-cell therapies; CR, complete response; DLBCL, diffuse large B-cell lymphoma; DoR, duration of response; ECOG, Eastern Cooperative Oncology Group performance status; LEN, lenalidomide; ORR, overall response rate; OS, overall survival; PFS, progression-free survival; Pola-BR, polatuzumab vedotin plus bendamustine and rituximab; R2, rituximab plus lenalidomide; R/R, relapsed/refractory.

- Comparator cohorts were generated using estimated propensity scores and 1:1 matching
- The resulting analysis sets included patients who met eligibility and the matching criteria
- Patient-level matched pairs were created and comprised patients who received Pola-BR, R2, and CAR-T therapies matched with patients from the tafasitamab + LEN cohort L-MIND criteria L-MIND criteria

Matched

analysis

sets



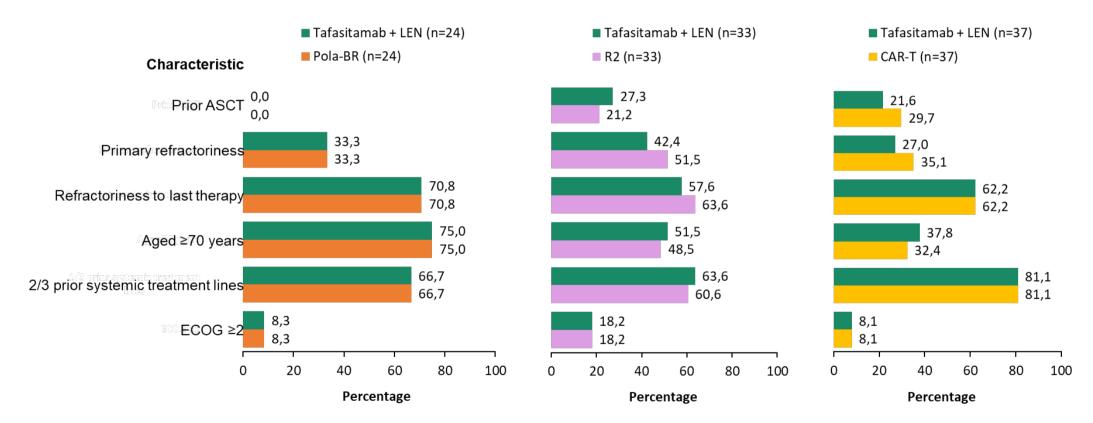
ROMA. 26 MAGGIO 2022

\*With complete data for six matching covariates, Based on 1:1 nearest neighbor propensity score.

• CAR-T, CD19 chimeric antigen receptor T-cell therapies; LEN, lenalidomide; Pola-BR, polatuzumab vedotin plus bendamustine and rituximab; R2, rituximab plus lenalidomide; R/R, relapsed/refractory.

### Results: Baseline characteristics for tafasitamab + LEN versus Pola-BR, R2, and CAR-T

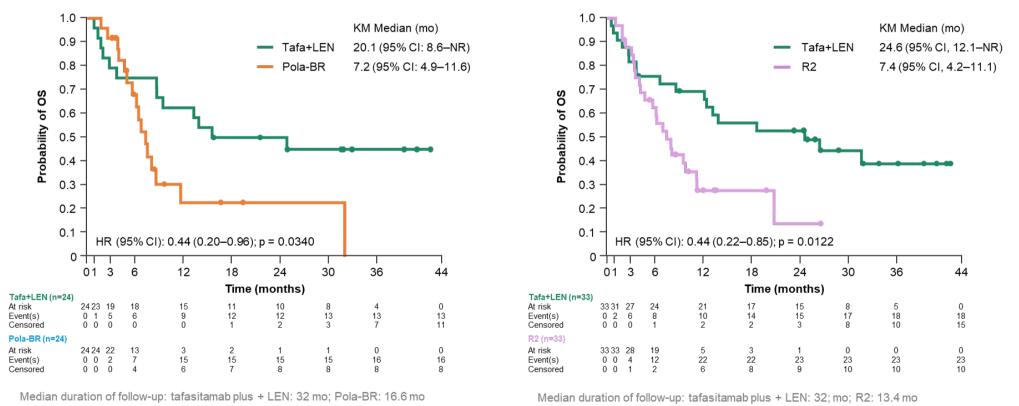
• A high degree of covariate balance was achieved between the tafasitamab plus LEN and comparator therapy cohorts



• ASCT, autologous stem-cell transplant; CAR-T, CD19 chimeric antigen receptor T-cell therapies; ECOG, Eastern Cooperative Oncology Group; LEN, lenalidomide; Pola-BR, polatuzumab vedotin plus bendamustine plus rituximab; R2, rituximab plus lenalidomide.

# Primary endpoint: OS (vs. Pola-BR & R2)

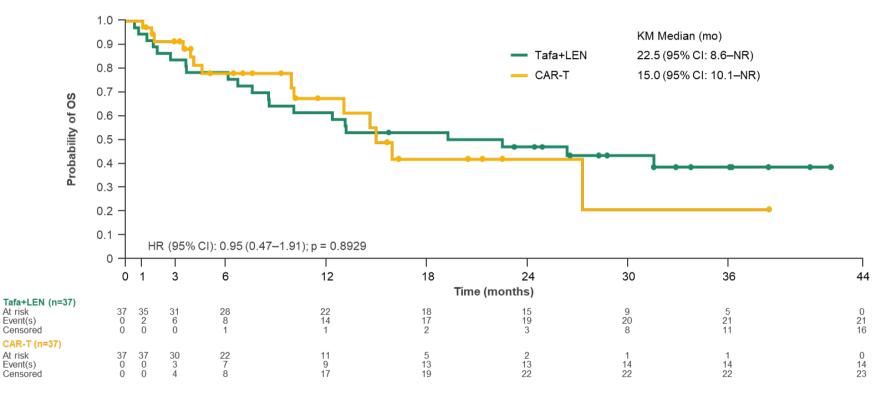
• Tafasitamab + LEN was associated with statistically significant improvements in OS versus Pola-BR and versus R2



• Cl, confidence interval; KM, Kaplan-Meier; LEN, lenalidomide; mo, month; NR, not reached; Pola-BR, polatuzumab vedotin plus bendamustine plus rituximab; OS, overall survival; R2, rituximab plus lenalidomide; Tafa, tafasitamab. P values were calculated using Log-rank test.

# Primary endpoint: OS (vs. CAR-T)

• A comparable OS benefit with tafasitamab + LEN versus CAR-T (22 versus 15 months), without statistical significance, was observed



Median duration of follow-up: tafasitamab plus + LEN: 32 mo; CAR-T: 10.2 mo

• CAR-T, CD19 chimeric antigen receptor T-cell; Cl, confidence interval; KM, Kaplan-Meier; LEN, lenalidomide; mo, month; NR, not reached; OS, overall survival; Tafa, tafasitamab.

# 2nd.ry endpoints: PFS, DoR

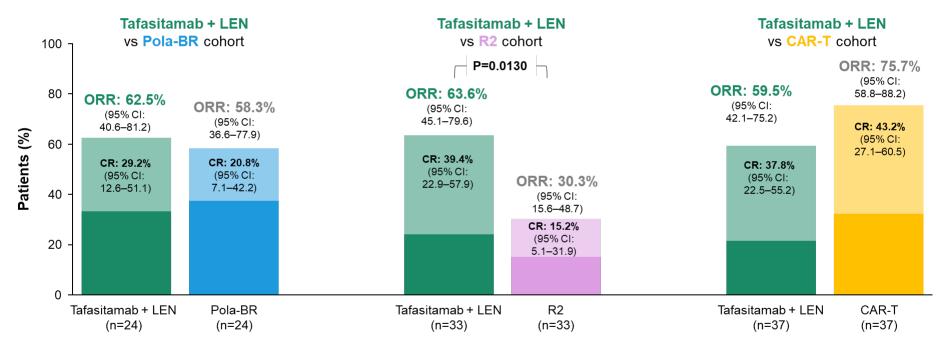
- Tafasitamab + LEN was associated with statistical and clinically meaningful improvements in PFS versus R2
  - Improvements in PFS were observed versus Pola-BR and versus CAR-T
- A low number of patients with tumor assessment data precluded comparative analysis of DoR

	Tafa + LEN	Pola-BR	Tafa + LEN	R2	Tafa + LEN	CAR-T
	(n=24)	(n=24)	(n=33)	(n=33)	(n=37)	(n=37)
Median <b>PFS</b> , mo	8.0	5.0	5.9	2.8	6.3	4.0
(95% Cl)	(1.9–19.9)	(2.5–5.6)	(3.6–36.7)	(2.0–5.8)	(3.6–22.5)	(3.1–12.8)
HR (95% CI) p <sup>*</sup> value	0.4 (0.217- 0.00	-1.073)	0.5 (0.281- <b>0.0</b>	-0.927)	0.612 (0.302–1.240) 0.1696	
Median <b>DoR</b> , mo	17.7	2.3	34.8	12.4	26.1	5.9
(95% Cl)	(3.6–34.8)	(0.3–6.1)	(3.6–34.8)	(2.7–19.3)	(4.4–NR)	(2.0–10.0)

 CAR-T, CD19 chimeric antigen receptor T-cell; CI, confidence interval; DoR, duration of response; KM, Kaplan-Meier; LEN, lenalidomide; mo, months; PFS, progression-free survival; Pola-BR, polatuzumab vedotin plus bendamustine plus rituximab; R2, rituximab plus lenalidomide; tafa, tafasitamab.
 \*Calculated using Log-rank test.

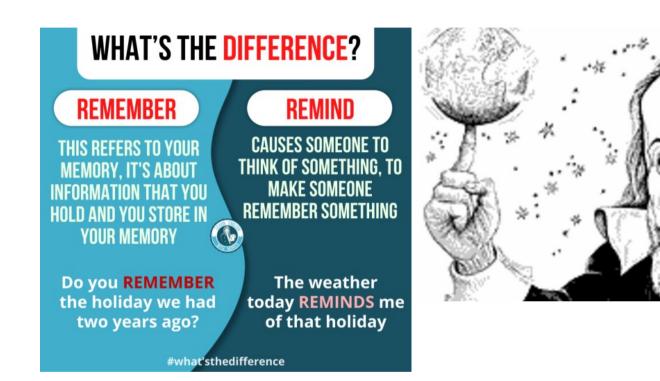
# 2nd.ry endpoints: ORR, CR rate

- ORR and CR rate were statistically significantly higher with tafasitamab + LEN versus R2
- Statistical differences versus Pola-BR and CAR-T were not detected with the sample sizes in the matched cohorts



 CAR-T, CD19 chimeric antigen receptor T-cell; CI, confidence interval; CR, complete response; LEN, lenalidomide; ORR, overall response rate; Pola-BR, polatuzumab vedotin plus bendamustine plus rituximab; R2, rituximab plus lenalidomide.

- The primary endpoint was met for comparisons with tafasitamab + LEN compared with Pola-BR and R2
  - Statistically significant improvements in median OS were observed
  - Median OS was comparable with tafasitamab + LEN relative to CAR-T therapies
- Numerical differences, favoring tafasitamab + LEN, were observed for the secondary endpoints
- Sensitivity analyses which confirmed the main analysis were performed
- The RE-MIND2 study design used strict patient-level matching to compare real-world and clinical trial populations
  - This allows a contextualization of outcomes with different treatments in the absence of head-to-head trials
- Due to the recent approval of the comparator treatments, these data may inform treatment decisions in the context of emerging therapies for R/R DLBCL



SIDERCEVS NVNCIVS MAGNA, LONGEQVE ADMIRABILIA Spectacula pandens, fulficiendadue proponens vnicuique, prafertim vero PHILOSOTHIS, arg ASTRONOMIS, que à GALILEO GALILEO PATRITIO FLORENTINO Patauini Gymnafij Publico Mathematico PERSPICILLI Neper d ferepreti beneficie finat e diferenta in UN-AFACIF, FIXIS IN-SUMERIS, LACTEO CIRCULO, STELLIS NEEDVISIS, Apprime vero in QVATVOR PLANETIS Circa IOVIS Stellam diffatibus intervalle, acque periodis, cederitate mitabili cucumulatis, guos, neuros finate dem cognitos, noutifimé Author deprabendit primus; atque MEDICEA SIDER A NVNCVPANDOS DECREVIT.

VENETIIS, Apud Thomam Baglionum. M DC X. Superior num Permilla, & Primilegio.

# TAFA-LENA: This is the first time that approval of a novel combination therapy was granted based on a pivotal single-arm trial (SAT)

- RE-MIND: to establish the effectiveness of LEN and the contribution of the two combination partners not previously approved in r/r DLBCL to the overall effect
- **RE-MIND2:** to characterize the effectiveness of tafasitamab + LEN in a real-world setting

Tafasitamab (rrDLBCL)		
Approval decisions		31 July 2020 ٨
Original US IND: January 2010		26 August 2021 CMA
2009 2010 2011 2012 201	13 2014 2015 2016 2017 2018	2019 2020 2021 2022
Regulatory strategy milestones, MAA/BLA procedure start dates	15 January 2015 (EU) ODD 1 December 2014 (US) FTD 29 October 2014 (US) BTD 23 October	30 April 2020 2017 (US) 30 December 2019
		(EU) MorphoSys ⇔ Incyte ♦ April 2021
	Sponsorship Transfer ODD (EU) Mor	rphoSys ⇔ Incyte 🔶 3 July 2020 (Eur. Comm.)
Clinical development: patient recruitme and follow-up periods		MIND, ongoing in autumn 2021) → mDLBCL
RWD: data collection periods	RWD	study (490 pts): NCT04150328 (RE-MIND) → m0LBCL RWD study (3454 pts): (RE-MIND2) → m0LBCL
RWD: data collection periods Indirect comparison (of L-MIND and con		++
Indirect comparison (of L-MIND and con	nparator trial data)	RWD study (3454 gts): (RE-MIND2) → mOLBCL
Indirect comparison (of L-MIND and con Prospective interventional trial: patient recru Prospective real-word data (RWD) study	nparator trial data)	RWD study (3454 pts): (RE-MIND2) → nOLBCL MAIC (80,440 pts): → nDLBCL Prospective interventional triat patient follow-up period
Indirect comparison (of L-MIND and con Prospective interventional triat: patient reon Retrospective real-word data (RWD) study Observational period for RE-MIND (i.e., per	nparator trial data) itment period (first-patient-in, lass-patient-in)	RWD study (3454 pts): (RE-MIND2) → nDLBCL MAVC (80+40 pts): -> nDLBCL Prospective interventional trial: patient follow-up period following set-up of protocol and statistical analysis plan)

#### FIGURE 1

Regulatory strategy milestones, clinical trial recruitment periods and supporting real-world data (RWD) studies of tafasitamab. Abbreviations: AA, accelerated approval (US); BLA, biological license application (US); BTD, breakthrough therapy designation (US); CMA; conditional marketing authorization (EU); Eur Comm, European Commission; FTD, fast-track designation (US); IND, investigational new drug (designation); MAA, marketing authorization application (EU); MAIC, matching-adjusted indirect comparison; ODD, orphan drug designation; pts, patients; trCLL/SLL, relapsed/refractory chronic lymphatic leukemia/small lymphocytic lymphoma; trOLBCL, relapsed/refractory diffuse large B cell lymphoma.