ABCL-1492

Mosunetuzumab plus Polatuzumab Vedotin is Superior to R-GemOx in Transplant-Ineligible Patients with R/R LBCL: Primary Results of the Phase III SUNMO Trial

Authors: Jason Westin,[1] Huilai Zhang,[2] Wonseog Kim,[3] Laura Maria Fogliatto,[4] Dai Maruyama,[5] Eduardo M. Rego,[6] Danielle Leão Cordeiro de Farias,[7] Lalita Norasetthada,[8] Huangming Hong,[9] Muhit Ozcan,[10] Young-Woo Jeon,[11] Astrid Pavlovsky,[12] Hideki Goto,[13] Adam Olszewski,[14]* Nikesh Shah,[15] Bei Hu,[16] Shen Yin,[17] Martin Janousek,[18] Jue Wang,[17] Connie Lee Batlevi,[17] Michael C. Wei,[17] L. Elizabeth Budde[19]

***e-mail: adam.olszewski@gmail.com**

Affiliations: [1]MD Anderson Cancer Center, Houston, TX, USA; [2]Tianjin Medical University Cancer Institute and Hospital, Tianjin, China; [3]Samsung Medical Center, Seoul, South Korea; [4]Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil; [5]Cancer Institute Hospital, Japanese Foundation for Cancer Research, Tokyo, Japan; [6]Instituto D'Or de Pesquisa e Ensino, Sao Paulo, Brazil; [7]Beneficencia Portuguesa de Sao Paulo, Sao Paulo, Brazil; [8]Faculty of Medicine, Chiang Mai University, Thailand; [9]Sichuan Cancer Hospital, Chengdu, China; [10]Ankara University School of Medicine, Ankara, Turkey; [11]Yeouido St. Mary's Hospital, Seoul, South Korea; [12]Fundaleu, Buenos Aires, Argentina; [13]Department of Hematology, Hokkaido University Hospital, Sapporo, Japan; [14]Brown University, Providence, RI, USA; [15]Tampa General Hospital Cancer Institute, Tampa, FL, USA; [16]Atrium Health Levine Cancer Institute and Wake Forest School of Medicine, Charlotte, NC, USA; [17]Genentech, Inc., South San Francisco, CA, USA; [18]F. Hoffmann-La Roche Ltd, Basel, Switzerland; [19]City of Hope National Medical Center, Duarte, CA, USA.

Summary

Mosun-Pola showed **promising outcomes as an outpatient regimen** in patients with R/R LBCL in a Phase II study

Here we report primary results from the **Phase III SUNMO trial**, which **met its primary endpoints of significantly improved PFS and ORR** for Mosun-Pola versus R-GemOx in patients with transplant-ineligible R/R LBCL

SUNMO is the first positive Phase III trial without conventional chemotherapy, supporting the use of Mosun-Pola as a fixed-duration, outpatient, off-the-shelf regimen for patients with transplant-ineligible R/R LBCL

The safety profile of Mosun-Pola was consistent with the known risk of the individual study drugs and there were **no significant CRS events (Grade 2 or higher) in 96% of patients**

Previously presented at the 2025 International Conference on Malignant Lymphoma (ICML) Annual Meeting | June 17–21, 2025

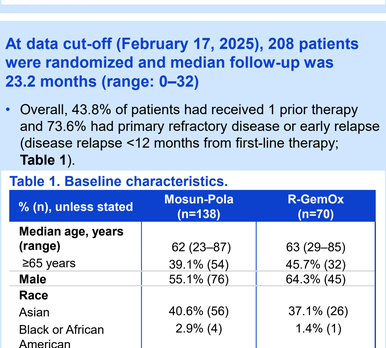
Background

- Patients with relapsed/refractory (R/R) large B-cell lymphoma (LBCL) unable to receive curative-intent therapies such as chimeric antigen receptor (CAR) T-cell therapy or autologous stem cell transplant (ASCT) have a poor prognosis[1]
  - Barriers to curative therapies may include rapidly progressing disease, lack of response to prior therapy, age, comorbidities, and/or logistical barriers,[1,2] and toxicities of T-cell directed therapies, such as cytokine release syndrome (CRS), may limit access for patients and burden healthcare systems.[2,3]
- Mosunetuzumab, a CD20xCD3 T-cell engaging bispecific antibody, plus polatuzumab vedotin, a CD79b targeting antibody-drug conjugate (Mosun-Pola), showed promising outcomes as an outpatient regimen in a Phase II study.[4,5]
- Here we present the efficacy and safety of Mosun-Pola versus rituximab plus gemcitabine and oxaliplatin (R-GemOx) in transplant-ineligible patients with R/R LBCL after ≥1 prior line of therapy from Phase III SUNMO trial (NCT05171647).

SUNMO (NCT05171647) is a global, randomized, Phase III trial

- Patients with R/R LBCL who were ASCT ineligible were randomized 2:1 to receive 8 cycles of Mosun-Pola (every 21 days) or R-GemOx (every 14 days; **Figure 1**).
- Primary endpoints were progression-free survival (PFS) by independent review committee (IRC) and objective response rate (ORR); overall survival (OS) was a key secondary endpoint.

Figure 1. Study overview.



*14-day cycles unless delayed to 21-day cycles if needed in case of hematologic toxicity.
C, cycle; D, day; DLBCL, diffuse large B-cell lymphoma; FL, follicular lymphoma; HGBCL, high-grade B-cell lymphoma; IV, intravenous; NOS, not otherwise specified; SC, subcutaneous.

At data cut-off (February 17, 2025), 208 patients were randomized and median follow-up was 23.2 months (range: 0–32)

- Overall, 43.8% of patients had received 1 prior therapy and 73.6% had primary refractory disease or early relapse (disease relapse <12 months from first-line therapy; **Table 1**).

Table 1. Baseline characteristics.

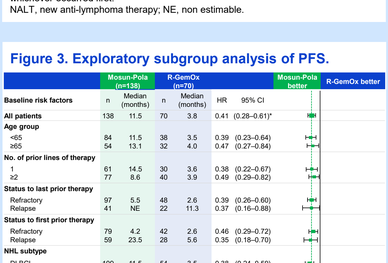
% (n), unless stated	Mosun-Pola (n=138)	R-GemOx (n=70)
Median age, years (range)	62 (23–87)	63 (29–85)
≥65 years	39.1% (54)	45.7% (32)
Male	55.1% (76)	64.3% (45)
Race		
Asian	40.6% (56)	37.1% (26)
Black or African American	2.9% (4)	1.4% (1)
White	44.2% (61)	54.3% (38)
Other/Unknown	12.3% (17)	7.1% (5)
ECOG PS		
0–1	87.0% (120)	98.6% (69)
2	13.0% (18)	1.4% (1)
NHL subtypes		
DLBCL	79.0% (109)	77.1% (54)
HGBCL	18.8% (26)	20.0% (14)
FL3b	2.2% (3)	2.9% (2)
Transformed FL*	12.6% (17)	8.8% (6)
Ann Arbor stage		
I–II	24.6% (34)	20.0% (14)
III–IV	75.4% (104)	80.0% (56)
Bulky disease (≥10cm)	20.3% (28)	7.1% (5)
Number of prior lines of therapy		
Median (range)	2 (1–9)	2 (1–5)
1	44.2% (61)	42.9% (30)
≥2	55.8% (77)	57.1% (40)
Primary refractory	57.2% (79)	60.0% (42)
Refractory to last prior therapy	70.3% (97)	68.6% (48)

*n=3 Mosun-Pola and n=2 R-GemOx had FL3b and were not included in the denominator for transformed FL.
ECOG PS, Eastern Cooperative Oncology Group performance status; NHL, non-Hodgkin lymphoma.

Mosun-Pola significantly prolonged PFS versus R-GemOx

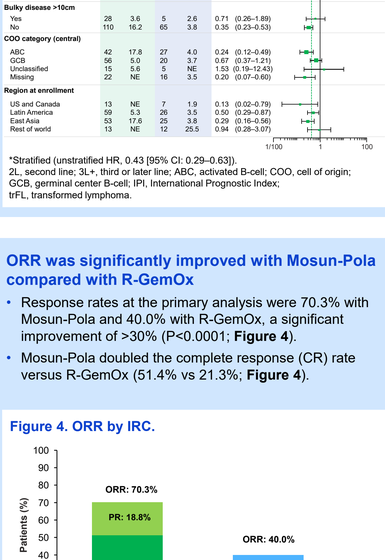
- PFS was significantly improved at 11.5 months (95% confidence interval [CI]: 5.6–17.6) for Mosun-Pola versus 3.8 months (95% CI: 2.9–4.1) for R-GemOx, demonstrating a 59% risk reduction for progression or death (hazard ratio [HR], 0.41, 95% CI: 0.28–0.61; p<0.0001; **Figure 2**).
- PFS benefit was consistent across prespecified subgroups (**Figure 3**), including patients receiving second-line therapy (HR, 0.38, 95% CI: 0.22–0.67), and patients with primary refractory disease or early relapse (HR, 0.44, 95% CI: 0.29–0.67).

Figure 2. PFS by IRC.



*PFS was censored at earliest of NALT or two or more missing tumor assessments, whichever occurred first.
NALT, new anti-lymphoma therapy; NE, non estimable.

Figure 3. Exploratory subgroup analysis of PFS.



*Stratified (unstratified HR, 0.43 [95% CI: 0.29–0.63]).
2L, second line; 3L+, third or later line; ABC, activated B-cell; COO, cell of origin; GCB, germinal center B-cell; IPI, International Prognostic Index; trFL, transformed lymphoma.

ORR was significantly improved with Mosun-Pola compared with R-GemOx

- Response rates at the primary analysis were 70.3% with Mosun-Pola and 40.0% with R-GemOx, a significant improvement of >30% (P<0.0001; **Figure 4**).
- Mosun-Pola doubled the complete response (CR) rate versus R-GemOx (51.4% vs 21.3%; **Figure 4**).

Figure 4. ORR by IRC.

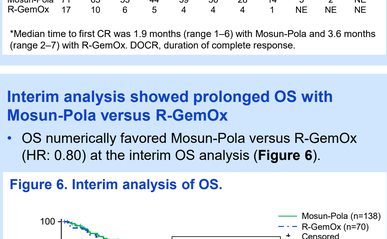


ORR by IRC, % (95% CI)	Mosun-Pola	R-GemOx	ΔORR (95% CI)	P value
Interim analysis	(n=119) **69.7%** (60.7–77.8)	(n=59) **44.1%** (31.2–57.6)	25.7% (9.6–41.8)	0.0008
Primary analysis	(n=138) **70.3%** (61.9–77.8)	(n=70) **40.0%** (28.5–52.4)	30.3% (15.7–44.9)	<0.0001*

*Descriptive P value. PR, partial response.

- Mosun-Pola achieved duration of remission in most patients with a CR, and nearly 75% of patients with a CR were still in remission with Mosun-Pola at 1 year (**Figure 5**).

Figure 5. Duration of CR.*

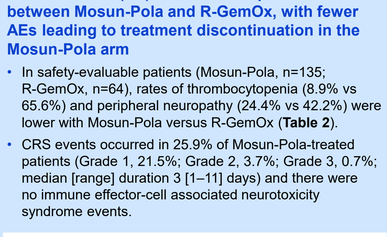


*Median time to first CR was 1.9 months (range 1–6) with Mosun-Pola and 3.6 months (range 2–7) with R-GemOx. DOCR, duration of complete response.

Interim analysis showed prolonged OS with Mosun-Pola versus R-GemOx

- OS numerically favored Mosun-Pola versus R-GemOx (HR: 0.80) at the interim OS analysis (**Figure 6**).

Figure 6. Interim analysis of OS.



Adverse event (AE) rates are comparable between Mosun-Pola and R-GemOx, with fewer AEs leading to treatment discontinuation in the Mosun-Pola arm

- In safety-evaluable patients (Mosun-Pola, n=135; R-GemOx, n=64), rates of thrombocytopenia (8.9% vs 65.6%) and peripheral neuropathy (24.4% vs 42.2%) were lower with Mosun-Pola versus R-GemOx (**Table 2**).
- CRS events occurred in 25.9% of Mosun-Pola-treated patients (Grade 1, 21.5%; Grade 2, 3.7%; Grade 3, 0.7%; median [range] duration 3 [1–11] days) and there were no immune effector-cell associated neurotoxicity syndrome events.

Table 2. Safety overview.

% (n), unless stated	Mosun-Pola (n=135)	R-GemOx (n=64)
Number of cycles, median (range)	8.0 (1–8)	5.0 (1–8)
Any AE	97.0% (131)	95.3% (61)
Treatment-related AE	93.3% (126)	89.1% (57)
SAEs	33.3% (45)	25.0% (16)
Treatment-related SAE	24.4% (33)	20.3% (13)
Grade 3–4 AE	58.5% (79)	57.8% (37)
Treatment-related Grade 3–4 AE	52.6% (71)	51.6% (33)
Grade 5 AE	5.2% (7)	6.3% (4)
Treatment-related Grade 5 AE*	1.5% (2)	3.1% (2)
AE leading to any study drug discontinuation†	2.2% (3)	4.7% (3)

*Mosun-Pola: COVID-19 and COVID-19 pneumonia (n=1 each); R-GemOx: COVID-19 pneumonia and pneumonia (n=1 each). †Mosun-Pola: pneumonitis, infusion-related reaction, and cytomegalovirus infection reactivation (n=1 each); R-GemOx: delirium, embolism, and respiratory syncytial virus infection (n=1 each). COVID-19, coronavirus disease-19; SAE, serious adverse event.

Conclusions

- SUNMO is the first positive Phase III trial without conventional chemotherapy; Mosun-Pola reduced the risk of death or progression by 59%, tripled the median PFS and doubled the CR rate versus R-GemOx.
- Mosun-Pola has the lowest CRS incidence and severity among T-cell directed therapies to date, with 96% of patients not having significant CRS; this may expand patient access to a highly effective therapy and allow broad outpatient usage.
- Mosun-Pola is a fixed duration outpatient regimen that combines a bispecific antibody with an antibody-drug conjugate, which provided clinically meaningful and statistically significant improvements in PFS and response in patients with transplant-ineligible R/R LBCL.

Presented at the 13th Annual Meeting of the Society of Hematologic Oncology (SOHO 2025) | September 3–6, 2025

References

1. Shi S, et al. *JCO* 2024;42(16 suppl):e19002.
2. Gajra A, et al. *Pharmaceut Med* 2022;36:163–71.
3. Brudno JN & Kochenderfer JN. *Blood* 2016;127:3321–30.
4. Budde LE, et al. *Nat Med* 2024;30:229–39.
5. Chavez JC, et al. *ASH* 2024; oral presentation #989.

Acknowledgments

SUNMO (NCT05171647) is sponsored by F. Hoffmann-La Roche Ltd. Third-party medical writing assistance, under the direction of the authors, was provided by Johanna Stork, MSc, of Ashfield MedComms, an Inizio company, and was funded by F. Hoffmann-La Roche Ltd. This abstract is included in the 19-ICML Abstract Book,(https://onlinelibrary.wiley.com/doi/10.1002/hon.70110_LBA3)

Disclosures

JW: consulting/advisory role (AbbVie, ADC therapeutics, Allogene, AstraZeneca, Bristol Myers Squibb, Genentech, Inc, Janssen, Kite Pharma/Gilead, Morphosys/Incyte, Novartis, Nurix, Pfizer, Regeneron); research funding (AbbVie, ADC therapeutics, Allogene, AstraZeneca, Bristol Myers Squibb, Genentech, Inc., Janssen, Kite/Gilead, Morphosys/Incyte, Novartis, Nurix, Pfizer, Regeneron); HZ: nothing to disclose; WK: research funding (Sanofi, BeiGene, Boryong, F. Hoffman-La Roche Ltd, Kyowa-Kirin, Dongai); LMF: consulting/advisory role (F. Hoffman-La Roche Ltd), travel, accommodations, expenses (F. Hoffman-La Roche Ltd); DM: honoraria (Ono, Nippon Shiyaku, Janssen, Mundipharma, Eisai, Chugai, Kyowa Kirin, Merck, Zenyaku, Sanofi, Symbio, Takeda, AbbVie, AstraZeneca, Bristol Myers Squibb, Genmab, Novartis, Pfizer), consulting/advisory role (AstraZeneca, Chugai, AbbVie, Genmab, Sanofi, Bristol Myers Squibb, Pfizer), research funding (Ono, Janssen, Eisai, Chugai, Kyowa Kirin, Merck, Zenyaku, Sanofi, Symbio, Takeda, AbbVie, AstraZeneca, Bristol Myers Squibb, Genmab, Novartis, Otsuka, Taiho, Pfizer, Astellas); EMR: Honoraria (AbbVie, TEVA, Astellas), employment (MSD), other (MSD); DLCF: consulting/advisory role (Kite Pharma/Gilead, Knight Therapeutics/United Medical, Janssen, Novartis, Amgen, Takeda, F. Hoffmann-La Roche Ltd, Bristol Myers Squibb, AbbVie, Libbs, Celgene, Eurofarma, BD), speaker's bureau (Knight Therapeutics/United Medical, Janssen, Lilly, AstraZeneca, Novartis, Amgen, Takeda, F. Hoffmann-La Roche Ltd, AbbVie, Libbs, Celgene, Pfizer, Sanofi, Pintfarma) research funding (F. Hoffmann-La Roche Ltd, Janssen, Millenium Takeda, AbbVie, Pfizer, Celltrion, AstraZeneca, Viracta, Agios, Astellas, Merck, Sanofi, Regeneron, Lilly, ADC Therapeutics, Libbs, BeiGene), travel, accommodations, expenses (Roche, Janssen, Takeda, AbbVie, Libbs); LN: speaker's bureau (Takeda, Bristol Myers Squibb, BeiGene, F. Hoffman-La Roche Ltd); HH: nothing to disclose; MO: research funding (AbbVie, Bayer, Janssen, Acerta, Merck, F. Hoffman La-Roche, Takeda, Pfizer, PSI, ADC Therapeutics, IQVIA, BeiGene), travel, accommodations, expenses (AbbVie, Sandoz, Merck, Turgut Medicine); YW-J: consulting/advisory role (Takeda Korea), AP: nothing to disclose; HG: honoraria (Chugai, Bristol Myers Squibb, Novartis, Gilead, AbbVie, Kyowa-Kirin, Takeda), consulting/advisory role (Gilead, AbbVie), research funding (Bristol Myers Squibb, Gilead, Sanofi, Kyowa-Kirin, Symbio); AO: consulting/advisory role (Genmab, Blue Cross and Blues Shield of Rhode Island, Schrodinger, ADC Therapeutics, BeiGene, Bristol-Myers Squibb), research funding (Genentech, Inc., F. Hoffmann-La Roche Ltd., Genmab, Artiva, Pfizer, Kymera Therapeutics); NS: honoraria (Curio Science); consulting/advisory role (Amgen, Jazz, Bristol Myers Squibb, ADC Therapeutics); BH: research funding (BeiGene, F. Hoffmann-La Roche Ltd, Genentech, Inc., Celgene, Bristol-Myers Squibb), travel, accommodations, expenses (Genentech, Inc., F. Hoffman-La Roche Ltd), other relationship (Genentech, Inc./F. Hoffman-La Roche Ltd, steering committee member); SY: employment (Genentech, Inc.), immediate family member employment (Aanvik Therapeutics), stock or other ownership (F. Hoffmann-La Roche Ltd), patents, royalties, other intellectual property (Genentech, Inc.); MJ: employment (F. Hoffmann-La Roche Ltd), stock or other ownership (F. Hoffman-La Roche Ltd), travel, accommodations, expenses (F. Hoffman-La Roche Ltd); JW: employment (Genentech Inc.), stock or other ownership (F. Hoffmann-La Roche Ltd.), patents, royalties, other intellectual property (F. Hoffmann-La Roche Ltd.); CLB: employment (Genentech, Inc./F. Hoffmann-La Roche Ltd), stock or other ownership (F. Hoffmann-La Roche Ltd), honoraria (Daiva Oncology, TouchIME, Medscape) consulting/advisory role (Bristol Myers Squibb, Seattle Genetics, Kite Pharma, Kanyopharm, TG Therapeutics, ADC Therapeutics, AbbVie, Genentech, Inc., Treeline Bioscience) research funding (Epizyme, Autolus, Roche, Vincerx), MCW: employment (Genentech, Inc), stock or other ownership (F. Hoffmann-La Roche Ltd.), patents, royalties, other intellectual property (Genentech, Inc.); EB: research funding (AstraZeneca), consulting/advisory role (Kite Pharma, Bristol Myers Squibb, AstraZeneca, F. Hoffmann-La Roche Ltd, Crispr Therapeutics, AbbVie, Jessen, Nurix Therapeutics, Genmab).