



American Society of Hematology

Helping hematologists conquer blood diseases worldwide

Preliminary Efficacy and Safety of the Bruton Tyrosine Kinase Degradar BGB-16673 in Patients With Relapsed or Refractory Waldenström Macroglobulinemia: Results From the Phase 1 CaDAnCe-101 Study

John F. Seymour,¹ Constantine S. Tam,² Chan Y. Cheah,³⁻⁵ Ricardo D. Parrondo,⁶ John N. Allan,⁷
Judith Trotman,⁸ Ranjana Advani,⁹ Herbert Eradat,¹⁰ Pier Luigi Zinzani,¹¹ Masa Lasica,¹² Steven P. Treon,¹³ Xiangmei Chen,¹⁴
Kunthel By,¹⁵ Shannon Fabre,¹⁵ Daniel Persky,¹⁵ Amit Agarwal,¹⁵ Anna Maria Frustaci¹⁶

¹Peter MacCallum Cancer Centre, Royal Melbourne Hospital, and University of Melbourne, Melbourne, VIC, Australia; ²Alfred Hospital and Monash University, Melbourne, VIC, Australia;

³Sir Charles Gairdner Hospital, Nedlands, WA, Australia; ⁴Medical School, University of Western Australia, Crawley, WA, Australia; ⁵Linear Clinical Research, Nedlands, WA, Australia;

⁶Mayo Clinic - Jacksonville, Jacksonville, FL, USA; ⁷Weill Cornell Medicine, New York, NY, USA; ⁸Concord Repatriation General Hospital, University of Sydney, Concord, NSW, Australia;

⁹Stanford Cancer Institute, Stanford, CA, USA; ¹⁰David Geffen School of Medicine at UCLA, Los Angeles, CA, USA; ¹¹Institute of Hematology "Seràgnoli", University of Bologna, Bologna, Italy;

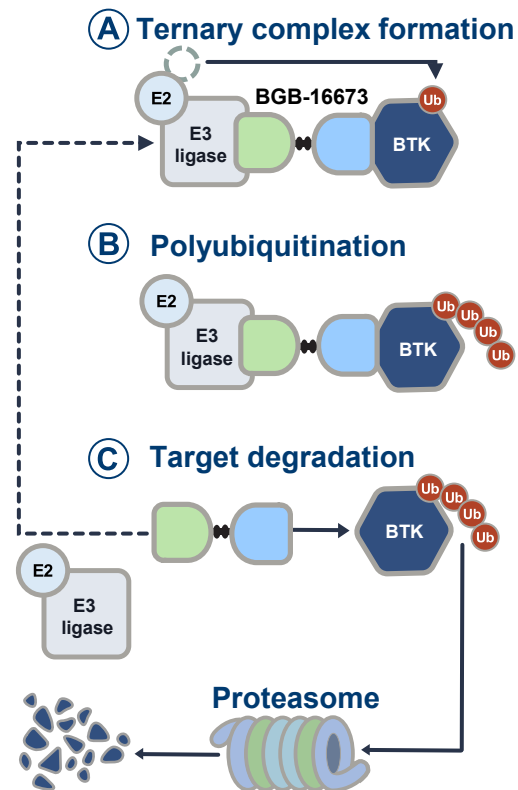
¹²St Vincent's Hospital Melbourne, Fitzroy, VIC, Australia; ¹³Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, USA; ¹⁴BeiGene (Shanghai) Co, Ltd, Shanghai, China;

¹⁵BeiGene USA, Inc, San Mateo, CA, USA; ¹⁶ASST Grande Ospedale Metropolitano Niguarda, Milano, Italy



BGB-16673: A Chimeric Degradation Activating Compound (CDAC)

- BTK inhibitors are effective in WM but are associated with toxicities and/or resistance development^{1,2}
- BGB-16673 is a bivalent CNS-penetrating small molecule that induces BTK degradation by binding specifically to BTK and the E3 ligase³
- In preclinical models, BGB-16673 degraded both wild-type and mutant BTK resistant to cBTK (C481S, C481F, C481Y, L528W, T474I) and ncBTK inhibitors (V416L, M437R, T474I, L528W), leading to tumor suppression^{3,4}
- BGB-16673 led to substantial reductions in BTK protein levels in peripheral blood and tumor tissue⁵
- Here, updated safety and efficacy results are presented in patients with R/R WM in phase 1 of CaDAnCe-101



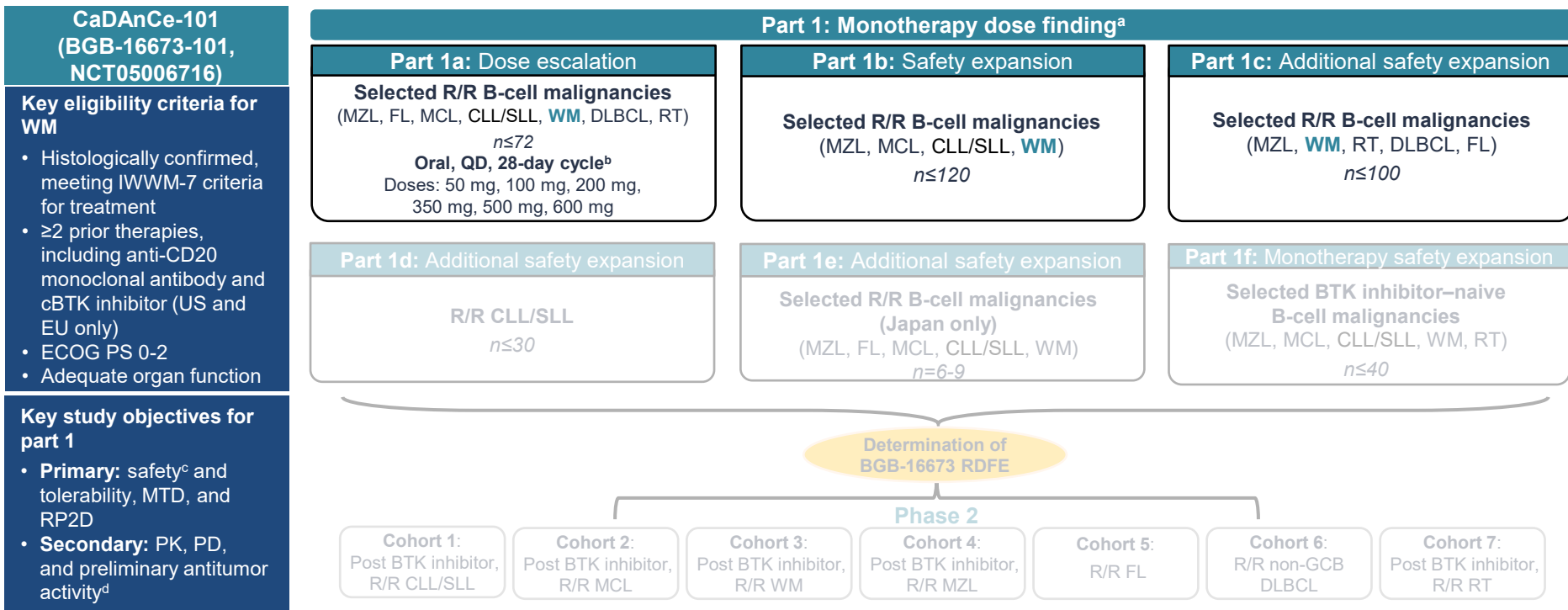
cBTK, covalent BTK; CNS, central nervous system; ncBTK, noncovalent BTK; ub, ubiquitin.

1. Castillo JJ, et al. *Lancet Haematol.* 2020;7(11):e827-e837; 2. Ntanasis-Stathopoulos I, et al. *Ther Adv Hematol.* 2021;12:2040620721989586;

3. Feng X, et al. EHA 2023. Abstract P1239; 4. Wang H, et al. EHA 2023. Abstract P1219; 5. Seymour JF, et al. ASH 2023. Abstract 4401.



CaDAnCe-101: Phase 1/2, Open-Label, Dose-Escalation/ Expansion Study in R/R B-Cell Malignancies



^a Data from gray portions of the figure are not included in this presentation. ^b Treatment was administered until progression, intolerance, or meeting other criteria for treatment discontinuation. ^c Safety was assessed according to CTCAE v5.0; DLTs were assessed during the first 4 weeks of part 1a. ^d Responses were assessed per IWWM-6, modified Owen 2013 criteria after 4 weeks. cBTK, covalent BTK; GCB, germinal center B cell; RT, Richter transformation.



Baseline Patient Characteristics

Heavily pretreated with high rate of WM mutations

	Total (N=27)
Age, median (range), years	73.0 (56-81)
Male, n (%)	15 (55.6)
ECOG PS, n (%)	
0	14 (51.9)
1	12 (44.4)
2	1 (3.7)
Hemoglobin, median (range), g/dL	10.3 (6.0-13.5)
Neutrophils, median (range), 10 ⁹ /L	2.7 (0.21-7.43)
Platelets, median (range), 10 ⁹ /L	157 (14-455)
Mutation status, n/N with known status (%)^a	
<i>MYD88</i> mutation present	24/26 (92.3)
<i>CXCR4</i> mutation present	12/25 (48.0)
<i>BTK</i> mutation present	11/25 (44.0)
<i>TP53</i> mutation present	13/25 (52.0)

	Total (N=27)
IgM, median (range), g/L	37.4 (2.8-74.4)
No. of prior lines of therapy, median (range)	3.0 (2-11)
Prior therapy, n (%)	
cBTK inhibitor	27 (100)
Chemotherapy	25 (92.6)
Proteasome inhibitor	9 (33.3)
BCL2 inhibitor	5 (18.5)
ncBTK inhibitor ^b	4 (14.8)
Discontinued prior BTK inhibitor due to PD, n (%)	21 (77.8)

Data cutoff: September 2, 2024.

^a Confirmed by central laboratory. ^b All 4 patients with ncBTK inhibitor exposure were exposed to a cBTK inhibitor.

cBTK, covalent BTK; IgM, immunoglobulin M; ncBTK, noncovalent BTK.



Safety Summary and All-Grade TEAEs in $\geq 10\%$ of All Patients

Well tolerated with no AEs leading to treatment discontinuation

- No DLTs^a
- No cases of atrial fibrillation, hypertension, major hemorrhage,^b febrile neutropenia, or pancreatitis
- One patient had IgM flare and/or rebound 1 week after starting treatment (went on to develop PR)

Patients, n (%)	Total (N=27)
Any TEAE	25 (92.6)
Any treatment-related	19 (70.4)
Grade ≥ 3	11 (40.7)
Treatment-related grade ≥ 3	7 (25.9)
Serious	7 (25.9)
Treatment-related serious	2 (7.4)
Leading to death ^c	1 (3.7)
Treatment-related leading to death	0
Leading to treatment discontinuation	0

Patients, n (%)	Total (N=27)	
	All Grade	Grade ≥ 3
Neutropenia^d	8 (29.6)	7 (25.9)
Diarrhea	7 (25.9)	0
Anemia	5 (18.5)	3 (11.1)
Contusion (bruising)	5 (18.5)	0
Rash	5 (18.5)	0
Thrombocytopenia^e	5 (18.5)	2 (7.4)
Amylase increased	4 (14.8)	0
Dizziness	4 (14.8)	0
Pyrexia	4 (14.8)	1 (3.7)
Arthralgia	3 (11.1)	0
Constipation	3 (11.1)	0
COVID-19	3 (11.1)	0
Fall	3 (11.1)	0
Headache	3 (11.1)	0
Lipase increased	3 (11.1)	1 (3.7)
Muscle spasms	3 (11.1)	0
Petechiae	3 (11.1)	0
Upper respiratory tract infection	3 (11.1)	0

Data cutoff: September 2, 2024. Median follow-up: 5.0 months (range, 0.8-24.6+).

^a DLTs were only assessed during the first 4 weeks of part 1a. ^b Grade ≥ 3 , serious, or any central nervous system bleeding. ^c Septic shock (200-mg dose level), note in the context of PD.

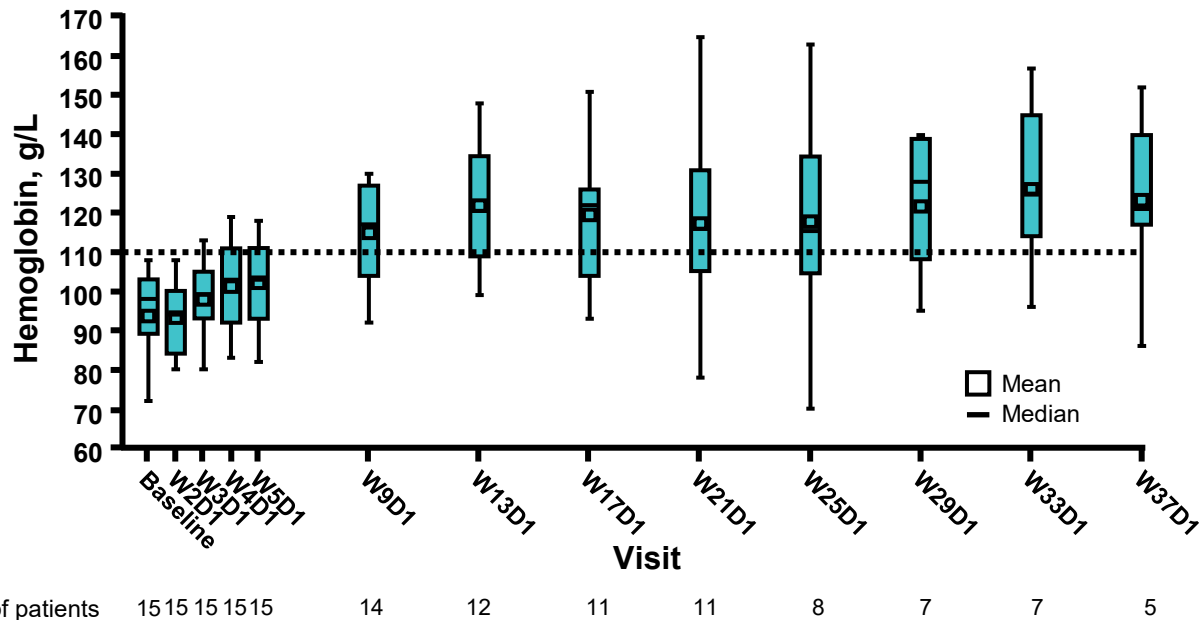
^d Neutropenia combines preferred terms *neutrophil count decreased* and *neutropenia*. ^e Thrombocytopenia combines preferred terms *platelet count decreased* and *thrombocytopenia*.



In Patients With Disease Response, There Was Rapid And Significant Improvement of Cytopenias

	Baseline	W9D1
Neutrophil count, median, $10^9/L$	0.49	1.05
Hemoglobin level, median, g/L	98	117
Platelet count, median, $10^9/L$	38	131.5

Hemoglobin Count in Patients With WM Who Had Baseline Anemia and Whose Disease Responded to Treatment



Overall Response Rate

High response rates across all risk groups

- Responses were observed starting at the lowest dose (100 mg; 7/9) and in patients with prior cBTK inhibitor (22/27) or ncBTK inhibitor (4/4)

	Total ^a (N=27)
Best overall response, n (%)	
VGPR	7 (25.9)
PR	13 (48.1)
MR	2 (7.4)
SD	3 (11.1)
Not evaluable	1 (3.7)
Discontinued prior to first assessment	1 (3.7)
ORR, n (%)^b	22 (81.5)
Major response rate, n (%)^c	20 (74.1)
Disease control rate (DCR), n (%)^d	25 (93.0)
Follow-up, median (range), months	5.0 (0.8-24.6)
Time to first response, median (range), months^e	1.0 (0.9-3.7)

Mutation status, n/N tested (%)	Total ^a (N=27)
BTK	
Mutated	10/11 (90.9)
Unmutated	11/14 (78.6)
Unknown	1/2 (50.0)
MYD88	
Mutated	20/24 (83.3)
Unmutated	1/2 (50.0)
Unknown	1/1 (100)
CXCR4	
Mutated	11/12 (91.7)
Unmutated	10/13 (76.9)
Unknown	1/2 (50.0)
TP53	
Mutated	12/13 (92.3)
Unmutated	9/12 (75.0)
Unknown	1/2 (50.0)

^a Efficacy-evaluable population. ^b Includes best overall response of MR or better. ^c Includes best overall response of PR or VGPR. ^d Includes best overall response of SD or better.

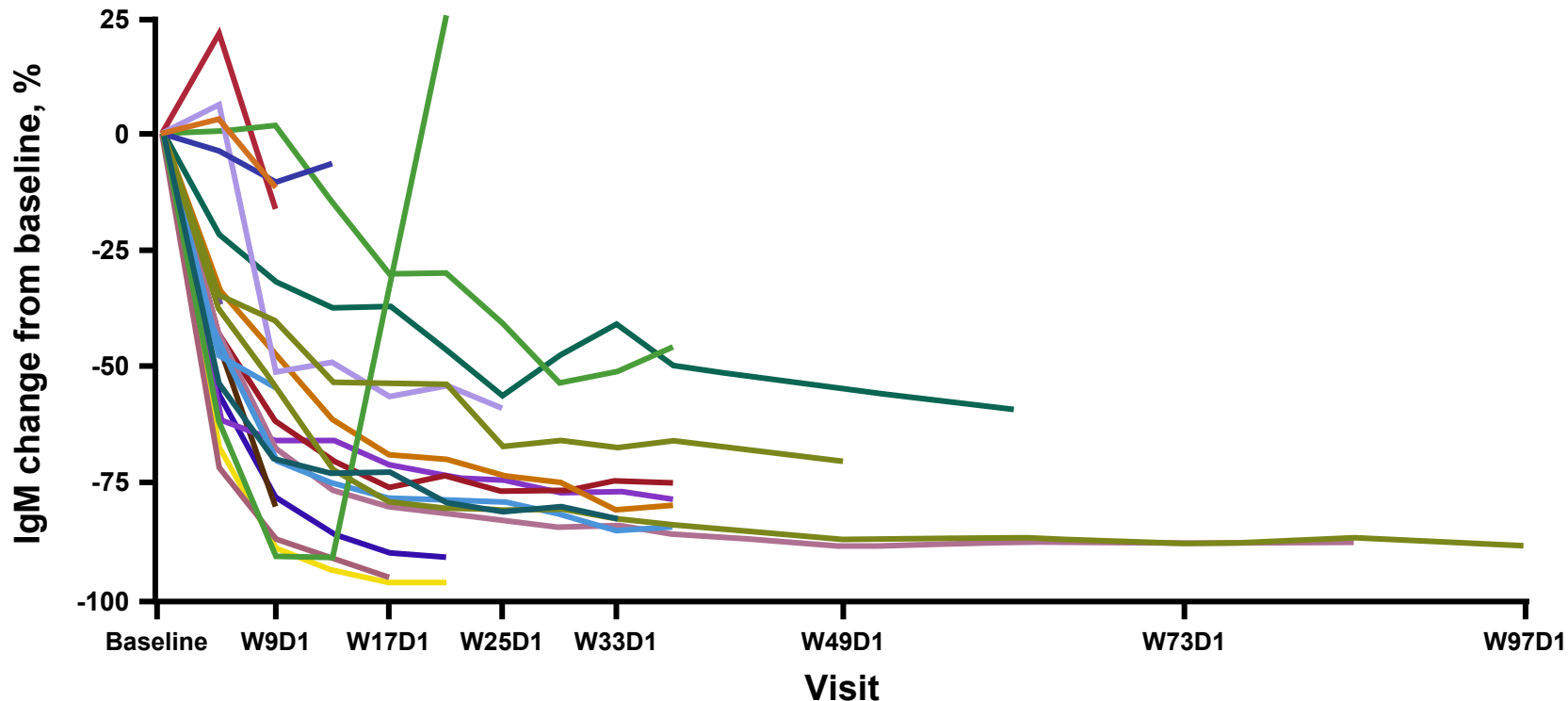
^e In patients with a best overall response better than SD.

cBTK, covalent BTK; MR, minor response; ncBTK, noncovalent BTK; VGPR, very good partial response.



IgM Decreased in All Patients

Rapid decline in IgM at all dose levels

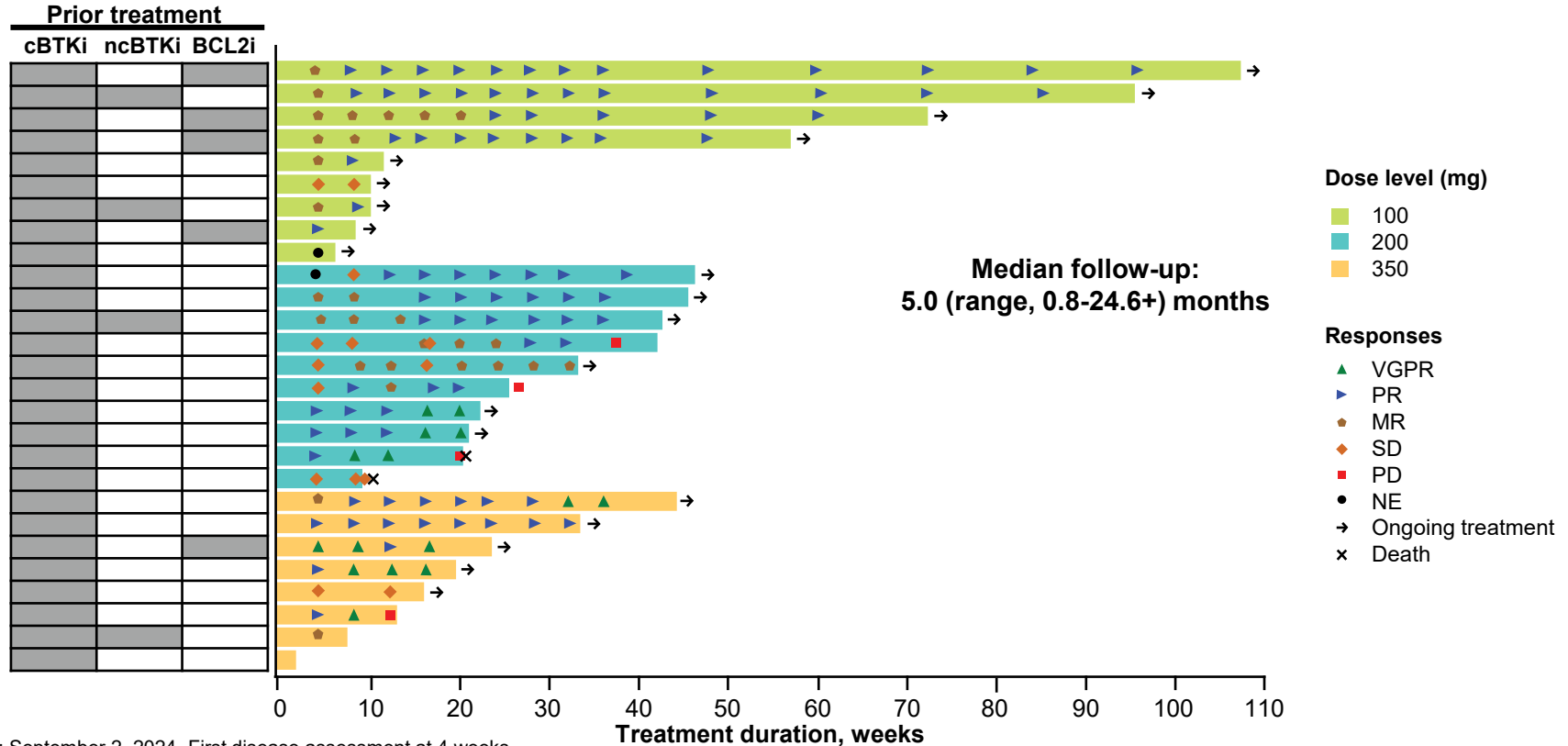


Patient with rapid IgM increase had WM mutations in *BTK*, *MYD88*, *CXCR4*, and *TP53* at baseline, paused treatment for 2-3 weeks due to COVID-19 infection, and developed rapid progression shortly after restarting treatment.
IgM, immunoglobulin M.



Treatment Duration and Response

Deepening of responses at all dose levels

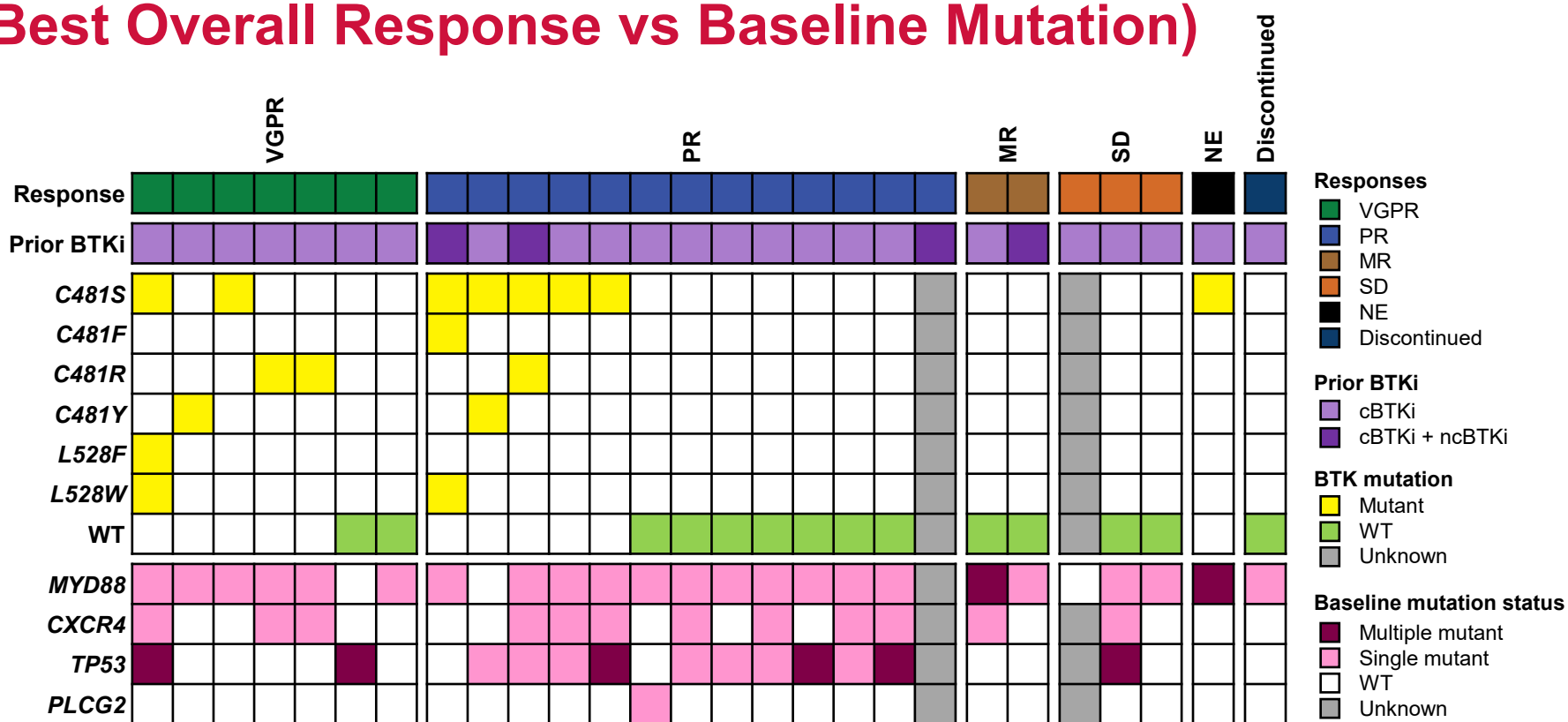


Data cutoff: September 2, 2024. First disease assessment at 4 weeks.

cBTKi, covalent BTK inhibitor; MR, minor response; ncBTKi, noncovalent BTK inhibitor; NE, not evaluable; VGPR, very good partial response.



Responses Occurred Regardless of Specific Mutations (Best Overall Response vs Baseline Mutation)



cBTKi, covalent BTK inhibitor; MR, minor response; ncBTKi, noncovalent BTK inhibitor; NE, not evaluable; VGPR, very good partial response; WT, wild type.

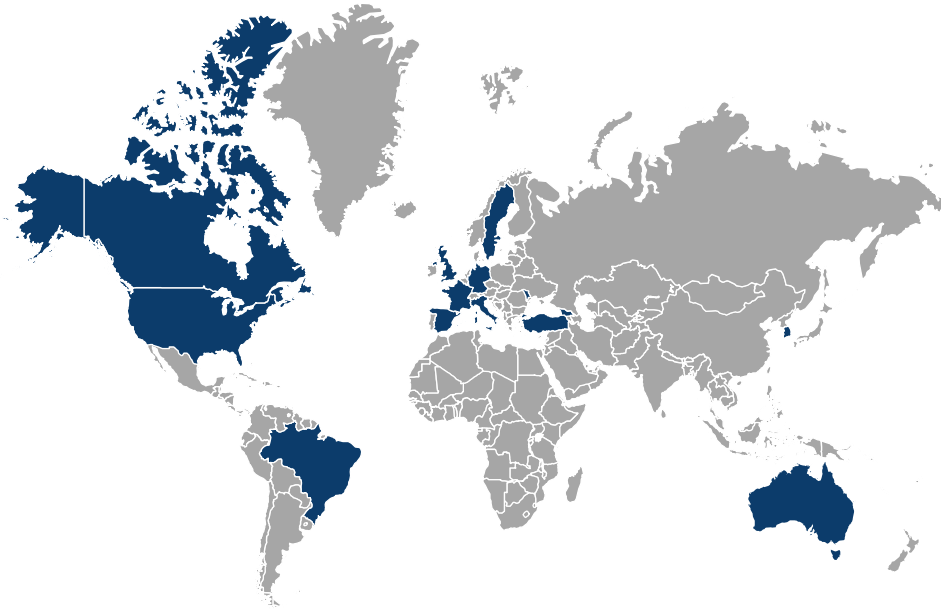


Conclusions

- In phase 1 of CaDAnCe-101, the BTK degrader BGB-16673 was well tolerated in heavily pretreated patients with R/R WM
 - No DLTs occurred; MTD was not reached
 - No atrial fibrillation or hypertension reported
- VGPR 25.9% (7/27 patients); ORR 81.5% (22/27); DCR 93.0% (25/27)
 - Rapid decline in IgM with median time to first response of 1.0 month
 - Rapid improvement in cytopenias seen in patients who experience disease response
 - Responses continue to deepen over time (median 5.0-month follow-up)
- Promising antitumor activity, including in patients with:
 - BTK inhibitor-resistant mutations
 - *TP53* and *CXCR4* mutations
 - Previous exposure to cBTK inhibitors, ncBTK inhibitors, and BCL2 inhibitors
- These data support further investigation of BGB-16673 clinical activity in patients with WM; enrollment in CaDAnCe-101 continues

CaDAnCe-101 Study Sites (Recruiting)

- Enrollment for CaDAnCe-101 phase 1 and phase 2 is ongoing at 100+ study sites across the US, Canada, the UK, France, Georgia, Germany, Italy, Moldova, Spain, Sweden, Turkey, Australia, South Korea, and Brazil



Acknowledgments

- The authors thank the patients and their families, investigators, co-investigators, and the study teams at each of the participating centers
- They also thank Amber Lussier and Moto Takai for assistance in developing this presentation and Qiming Zhou from Bioinformatics for assistance on the high throughput data analysis
- This study was sponsored by BeiGene, Ltd
- Medical writing was provided by Brittany Gifford, PharmD, of Nucleus Global, an Inizio company, and supported by BeiGene

Corresponding author: John F. Seymour, john.seymour@petermac.org

