Autolus

American Society of Clinical Oncology Analyst Call

1 June 2024

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Agenda

- Welcome and Introduction: Olivia Manser, Director, Investor Relations
- The obe-cel program to date: Dr. Christian Itin, CEO
- ASCO Data: Dr. Claire Roddie
- Q&A: Dr. Christian Itin and Dr. Claire Roddie

Autolus overview – scaling towards commercialization

Building a leading CAR T company developing therapies for cancer and autoimmune diseases

Obe-cel potentially best in class CAR T for r/r adult ALL

- FELIX pivotal trial showed high ORR, encouraging EFS and favorable tolerability with low levels of high-grade CRS and ICANS
- PDUFA target action date November 16, 2024
- EMA filing submitted

Pipeline expansion strategy

- Expand obe-cel opportunity in B cell malignancies, autoimmune diseases & life cycle strategy
  - SLE
  - B-NHL indications
  - Bi-specific therapies (CD19 /CD22; CD19/BCMA)
- Expand to additional indications with novel CAR T therapies, alone or with partners

Scalable manufacturing and in-house facility

- Demonstrated reliable clinical trial supply (96% target dose reached in FELIX pivotal study)
- New commercial cell manufacturing facility in qualification stage; planned annual capacity 2,000+ batches
- Expected vein-to-delivery time at launch of ~16 days

Strategic collaborations

- Strategic multi-platform R&D collaboration with BioNTech
- Established technology collaborations with Moderna, BMS and Cabaletta
- Long-standing academic collaboration with University College London

Strong cash position

- Cash $759M end of Q1 2024
- Fully funds obe-cel launch in adult ALL and allows for autoimmune program acceleration

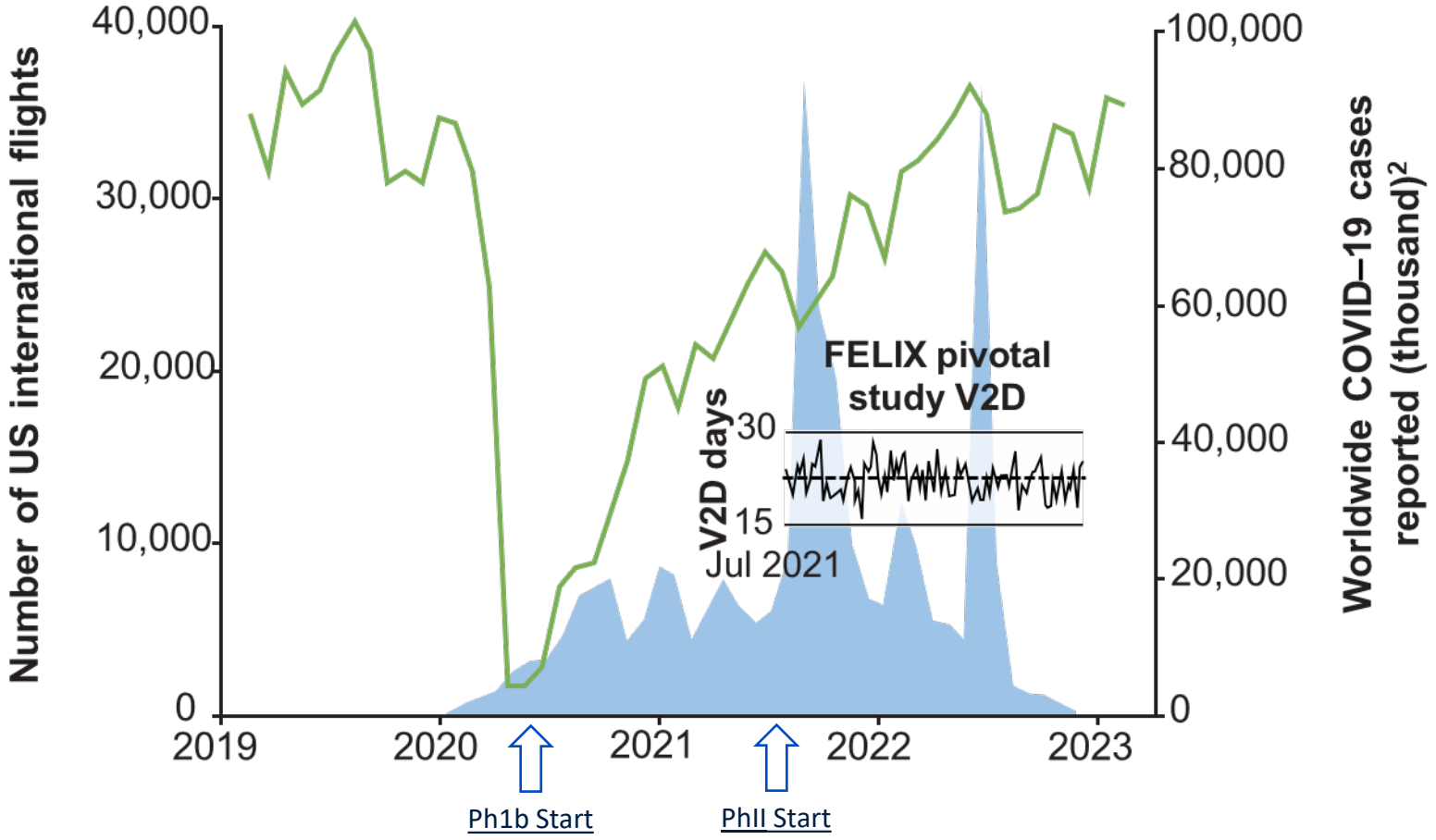
Abbreviations and notes: r/r ALL – relapsed/refractory acute lymphoblastic leukemia; B-NHL – B-cell non-Hodgkin's lymphoma; SLE – systemic lupus erythematosus

OBE-CEL FOR ALL

obe-cel program evolution

The FELIX phase 1b/2 study

Reliable obe-cel supply for FELIX despite the COVID–19 pandemic

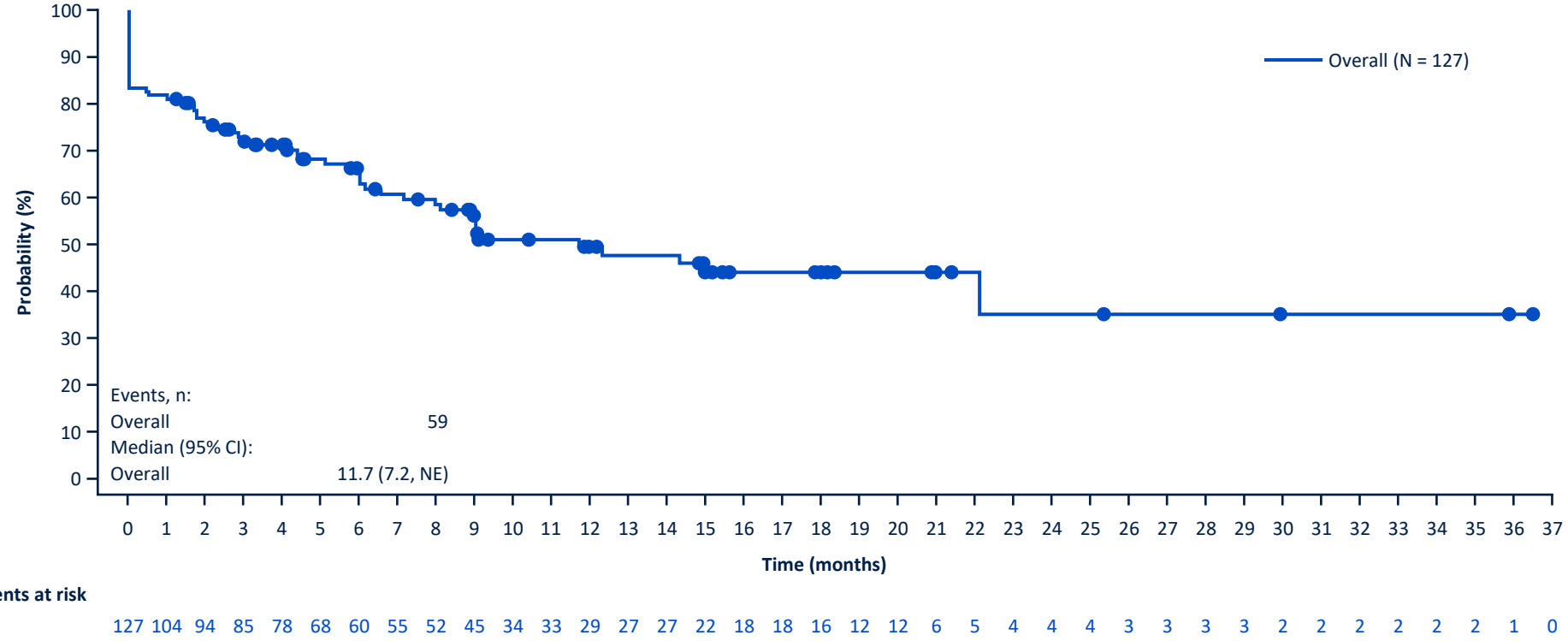


- US international airline flights decreased by 41% compared to flights from pre-COVID–19 pandemic[1]
- BUT international flights are reliable and on time
- Sample collection and drug product delivery were successfully maintained, with no batches impacted

1United States Department of Transportation, Bureau of Transportation Statistics 2021 [online]. Available at: https://www.bts.gov/data-spotlight/commercial-aviation-2020-downturn-airline-passengers-employment-profits-and-flights Accessed October 2023;
2World Health Organization COVID–19 dashboard [online]. Available at: https://covid19.who.int/ Accessed October 2023

ASH2023: FELIX Phase 1b/2 pooled analysis: EFS in all treated patients*

The event-free survival estimate at 12 months was 50%



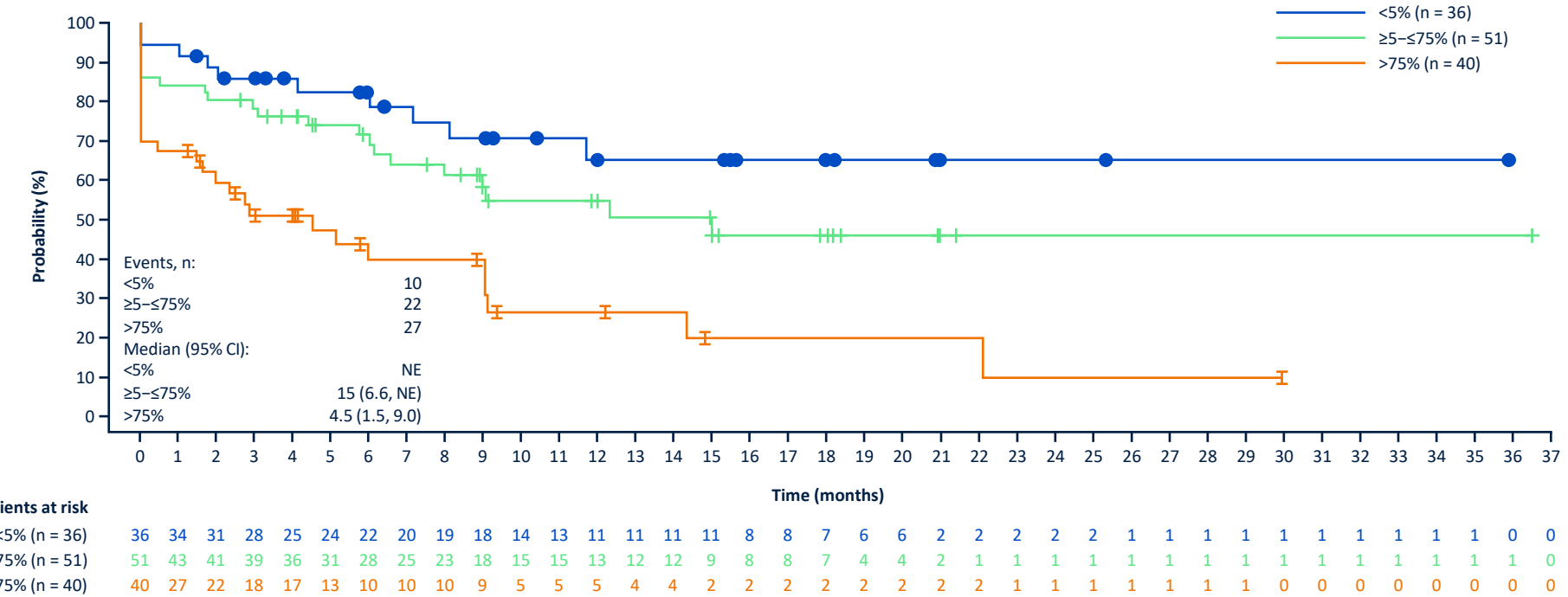
All treated patients (N = 127)	
Median EFS (95% CI), months	**11.7** (7.2, NE)
6-month EFS (95% CI), %	**65** (56, 73)
12-month EFS (95% CI), %	**50** (39, 59)

- Median follow-up time was 16.6 months (range: 3.7–36.6 months)
- 17/99 (17%) responders proceeded to SCT while in remission

*Censoring new non-protocol anti-cancer therapies including SCT with disease assessment by IRRC (data cut-off date: September 13, 2023); Median EFS: ITT population – 9.8 months (95% CI: 5.9, 12.9); CI, confidence interval; EFS, event-free survival; IRRC, Independent Response Review Committee; ITT, intent-to-treat; NE, not evaluable; obe-cel, obecabtagene autoleucel; SCT, stem cell transplant; Roddie et al., ASH 2023

ASH2023: EFS by leukemic burden prior to lymphodepletion*

Lower leukemic burden is associated with better outcomes



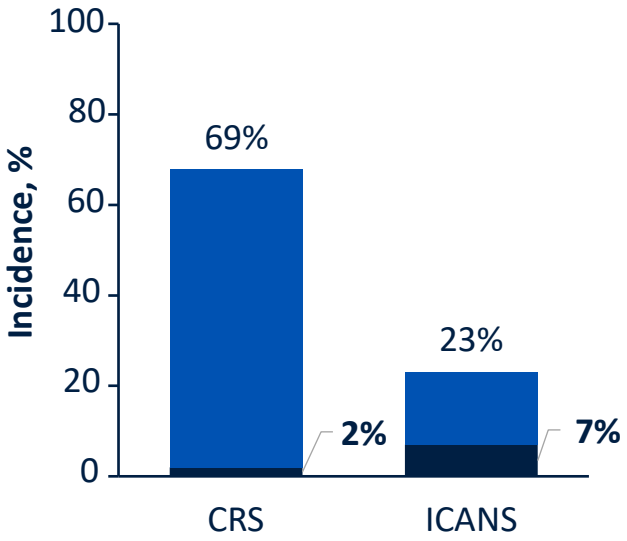
BM blasts % prior to lymphodepletion	<5% (n = 36)	≥5–≤75% (n = 51)	>75% (n = 40)
Median EFS (95% CI), months	**NE**	**15.0** (6.6, NE)	**4.5** (1.5, 9.0)
6-month EFS (95% CI), %	**83** (65, 92)	**72** (57, 82)	**40** (23, 56)
12-month EFS (95% CI), %	**65** (44, 80)	**55** (38, 69)	**27** (12, 44)

*Censoring new non-protocol anti-cancer therapies including SCT with disease assessment by IRRC (data cut-off date: September 13, 2023); BM, bone marrow; CI, confidence interval; EFS, event-free survival; IRRC, Independent Response Review Committee; NE, not evaluable; SCT, stem cell transplant; Roddie et al., ASH 2023

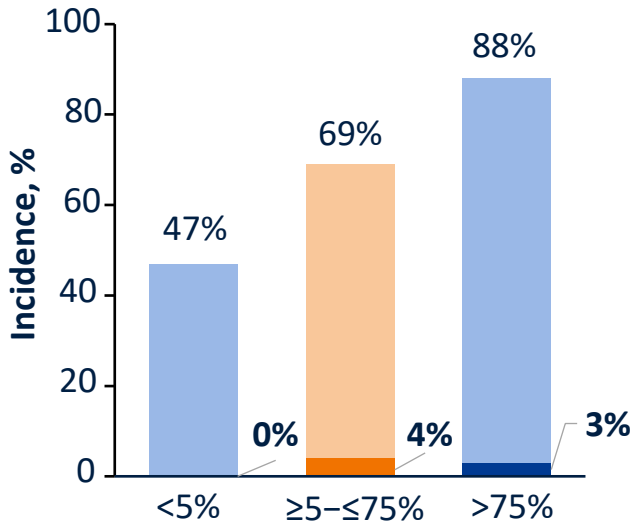
ASH2023 FELIX Phase 1b/2 pooled analysis: CRS and ICANS

Low rates of Grade ≥3 CRS and/or ICANS were observed

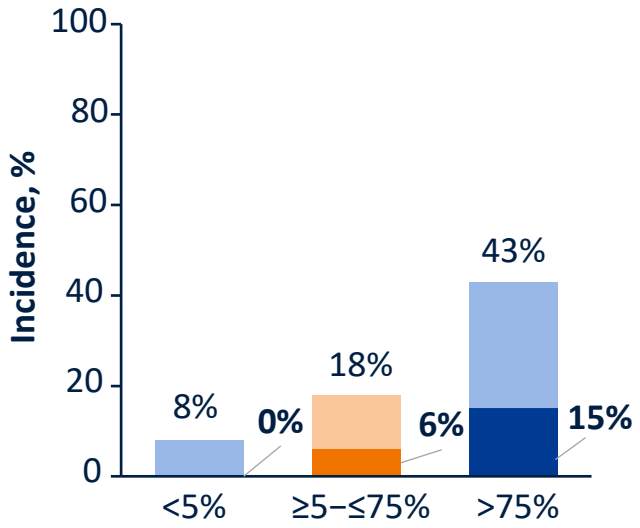
CRS and ICANS in all patients



CRS by % BM blasts



ICANS by % BM blasts



BM blasts % at lymphodepletion

- No grade ≥3 CRS and/or ICANS were observed in patients with <5% BM blasts at lymphodepletion
- Vasopressors were used to treat CRS in 2.4% of patients
- The treatment was generally well tolerated
- Two deaths were considered treatment-related per investigator assessment: neutropenic sepsis (n = 1); acute respiratory distress syndrome and ICANS (n = 1)

Light colors = grade ≤2
Dark colors = grade ≥3

BM, bone marrow; CRS, cytokine release syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome; ICU, intensive care unit; Roddie et al., ASH 2023

ASCO 2024

Publication Number: 6504

2024 ASCO® ANNUAL MEETING

FELIX 19

OBECABTAGENE AUTOLEUCEL (OBE-CEL, AUTO1) IN ADULTS WITH RELAPSED/REFRACTORY B-CELL ACUTE LYMPHOBLASTIC LEUKEMIA: OVERALL SURVIVAL, EVENT-FREE SURVIVAL AND THE POTENTIAL IMPACT OF CHIMERIC ANTIGEN RECEPTOR T-CELL PERSISTENCY AND CONSOLIDATIVE STEM CELL TRANSPLANTATION IN THE OPEN-LABEL, SINGLE-ARM FELIX PHASE IB/II STUDY

Elias Jabbour,[1] Eleni Tholouli,[2] Karamjeet S. Sandhu,[3] Paul Shaughnessy,[4] Pere Barba,[5] Manuel Guerreiro,[6] Deborah Yallop,[7] Aaron C. Logan,[8] Mehrdad Abedi,[9] Pierre Lao-Sirieix,[10] Yiyun Zhang,[11] Wolfram Brugger,[12] Martin A. Pule,[10] Bijal D. Shah,[13] Michael R. Bishop,[14] Jae H. Park,[15] Daniel J. DeAngelo,[16] Karl Peggs,[17] Claire Roddie[17]

[1]University of Texas MD Anderson Cancer Center, Houston, TX, USA; [2]Manchester Royal Infirmary, Manchester, UK; [3]City of Hope National Medical Center, Duarte, CA, USA; [4]Sarah Cannon Transplant and Cellular Therapy Program, Methodist Hospital, San Antonio, TX, USA; [5]Hospital Universitari Vall d'Hebron-Universitat Autónoma de Barcelona, Barcelona, Spain; [6]Hospital Universitari I Politècnic La Fe, Valencia, Spain; [7]King's College Hospital London, UK; [8]Hematology, Blood and Marrow Transplantation, and Cellular Therapy Program, University of California at San Francisco, San Francisco, CA, USA; [9]University of California Davis, Davis, CA, USA; [10]Autolus Therapeutics, London, UK; [11]Autolus Therapeutics, Rockville, MD, USA; [12]Autolus Therapeutics, Munich, Germany; [13]Moffitt Cancer Center, Tampa, FL, USA; [14]The David and Etta Jonas Center for Cellular Therapy, University of Chicago, Chicago, IL, USA; [15]Memorial Sloan Kettering Cancer Center, New York, NY, USA; [16]Dana-Farber Cancer Institute, Boston, MA, USA; [17]University College London Cancer Institute, London, UK

Takeaway messages

- 40% of responders in ongoing remission without subsequent SCT/other therapy, with a median follow-up of 21.5 months
- Survival outcomes show potential of long-term plateau
- SCT consolidation in remission following obe-cel did not improve EFS or OS
- Ongoing CAR T persistence was associated with improved EFS

Background: Obe-cel

- A novel fast off-rate anti-CD19 autologous CAR T-cell therapy
- Potential to improve persistence and reduce immune-mediated toxicity
- FELIX (NCT04404660): an open-label, multi-center, single-arm Phase Ib/II study evaluating safety and efficacy of obe-cel in adult R/R B-ALL[1–3]
- Patient enrollment period: June 2020–November 2022

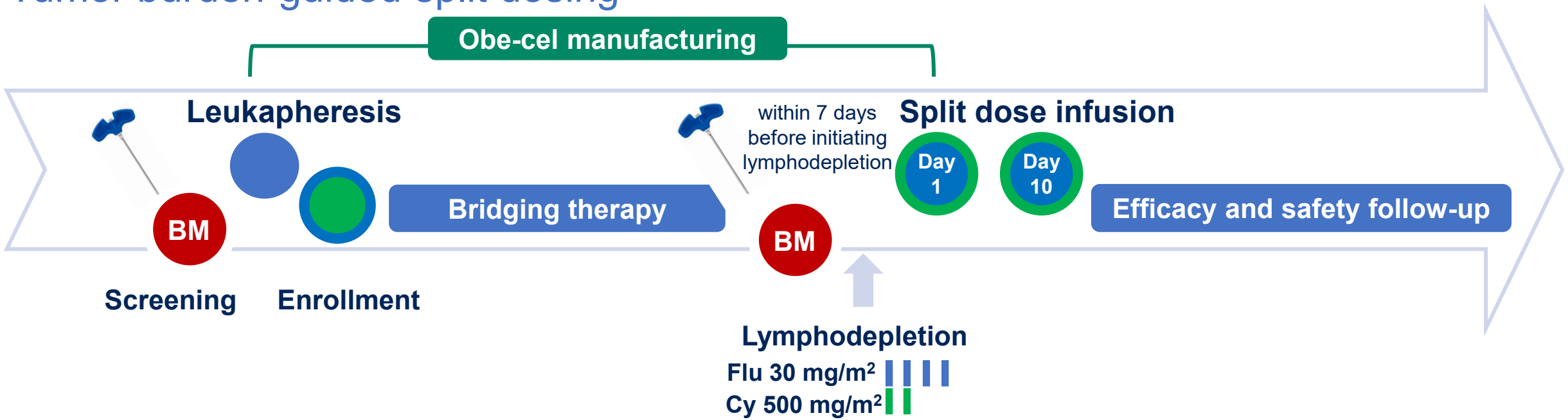
Here, we present EFS, OS and impact of CAR T persistence and consolidative SCT in patients treated with obe-cel*

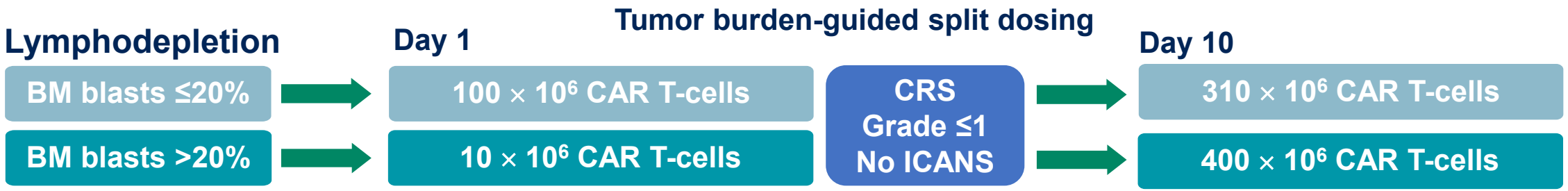
*The safety profile of obe-cel, evaluated in FELIX, has previously been presented in detail[1,2] and will not be discussed during this presentation

1. Roddie C, et al. J Clin Oncol 2023;41(Supplement 16):7000;
2. Roddie C, et al. Blood 2023;142(Supplement 1):222;
3. Roddie C, et al. Blood 2023;142(Supplement 1):2114.

Study design

Tumor burden-guided split dosing





Patient eligibility and endpoints

127/153 (83%) enrolled patients received obe-cel*

Key eligibility criteria

- Adult R/R B-ALL‡
- Age ≥18 years

Enrolled† N = 153

Infused N = 127

Cohort A
≥5% BM blasts
n = 107 (84%)

Cohort B
MRD-positive
n = 13 (10%)

Cohort C
Isolated EMD
n = 7 (6%)

Data cut-off date:
February 7, 2024

Selected endpoints§

- CR/CRi rate per IRRC
- DoR
- EFS
- OS
- MRD-negativity rate (<10^{-4})
- Safety
- CAR T expansion/persistence
- Manufacture feasibility

*Seven patients received Dose 1 only. ‡R/R B-ALL: primary refractory; first relapse if first remission ≤12 months; R/R disease after ≥2 lines of systemic therapy; R/R disease after allogeneic transplant; R/R Philadelphia chromosome-positive ALL if intolerant to/failed two lines of any TKI or one line of second-generation TKI, or if TKI therapy is contraindicated.§Primary endpoints: Cohorts A and C, ORR defined as the proportion of patients achieving CR or CRi; Cohort IIB, the proportion of patients achieving MRD-negative remission (<10^{-4} leukemic cells).†All eligibility criteria met and the leukapheresate accepted for manufacturing. Discontinuations due to: manufacturing related, 7 (5%) and death/uncontrolled disease, 19 (12%).

Baseline characteristics

Heavily pre-treated patients

	Cohort IIA ≥5% BM blasts (N = 94)	Total (N = 127)
Age in years, median (range)	50 (20–81)	47 (20–81)
Gender, male/female	47/47	66/61
Hispanic or Latino, n (%)	29 (30.9)	38 (29.9)
Philadelphia chromosome-positive, n (%)	25 (26.6)	36 (28.3)
Complex karyotype, n (%)*	37 (39.4)	51 (40.2)
Median prior lines of therapy (range)	**2 (1–6)**	**2 (1–6)**
Number of prior lines of therapy, n (%) **3** **≥4**	 **17 (18.1)** **12 (12.8)**	 **26 (20.5)** **19 (15.0)**
Prior blinatumomab, n (%) **Prior inotuzumab, n (%)** **Prior blinatumomab and inotuzumab, n (%)**	**33 (35.1)** **30 (31.9)** **15 (16.0)**	**53 (41.7)** **40 (31.5)** **21 (16.5)**
Prior allo-SCT, n (%)	**36 (38.3)**	**56 (44.1)**
Disease burden (BM blast %) at screening, median (range)	**58.9 (6–100)**	**40.0 (0–100)**
Extramedullary disease at screening, n (%)	**19 (20.2)**	**29 (22.8)**

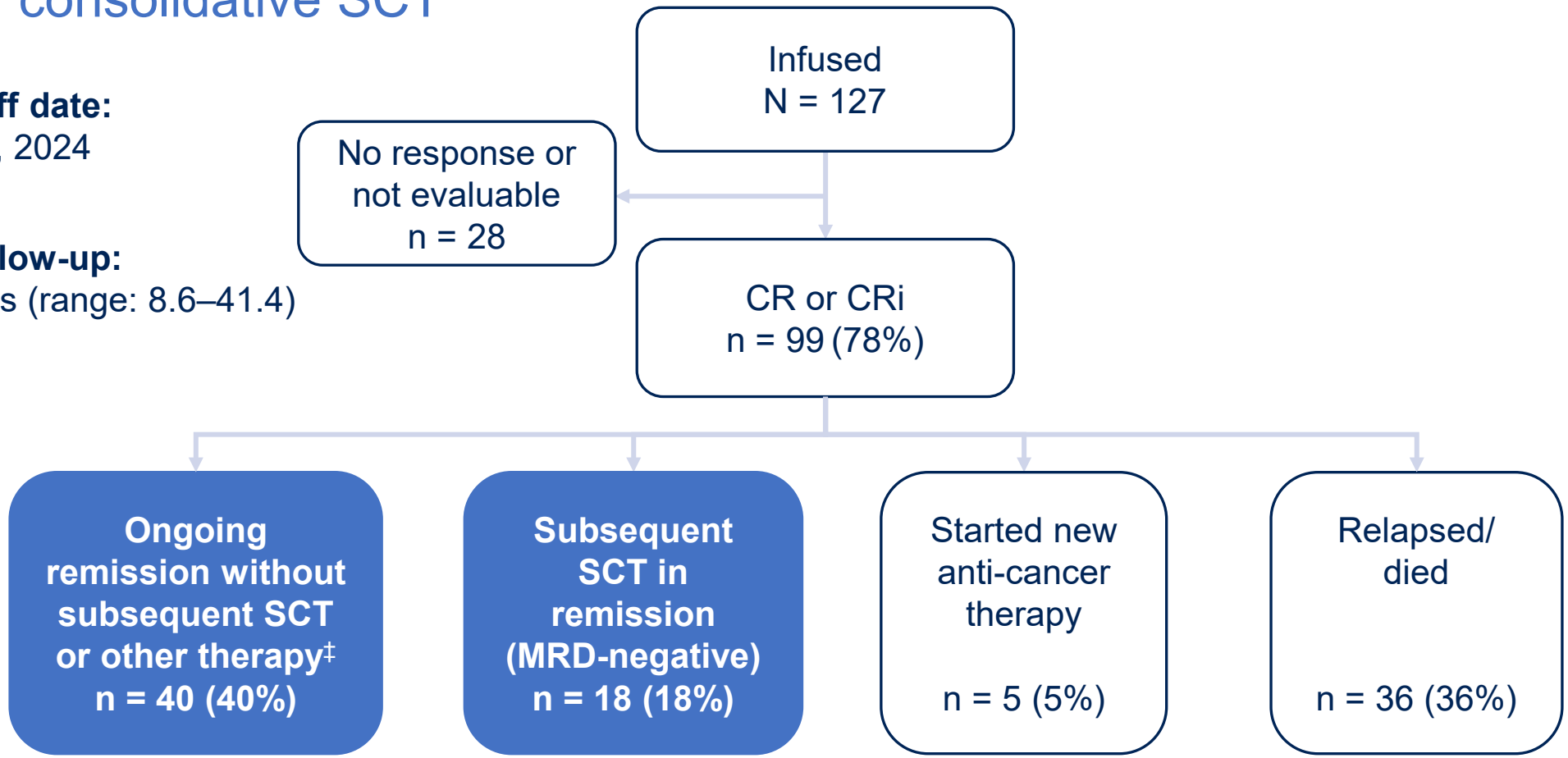
*Classification of cytogenetic risks of hematologic malignancies associated with a poor prognosis.

Majority of responders show durable response

40% of responders are in ongoing remission without consolidative SCT and 18% had consolidative SCT

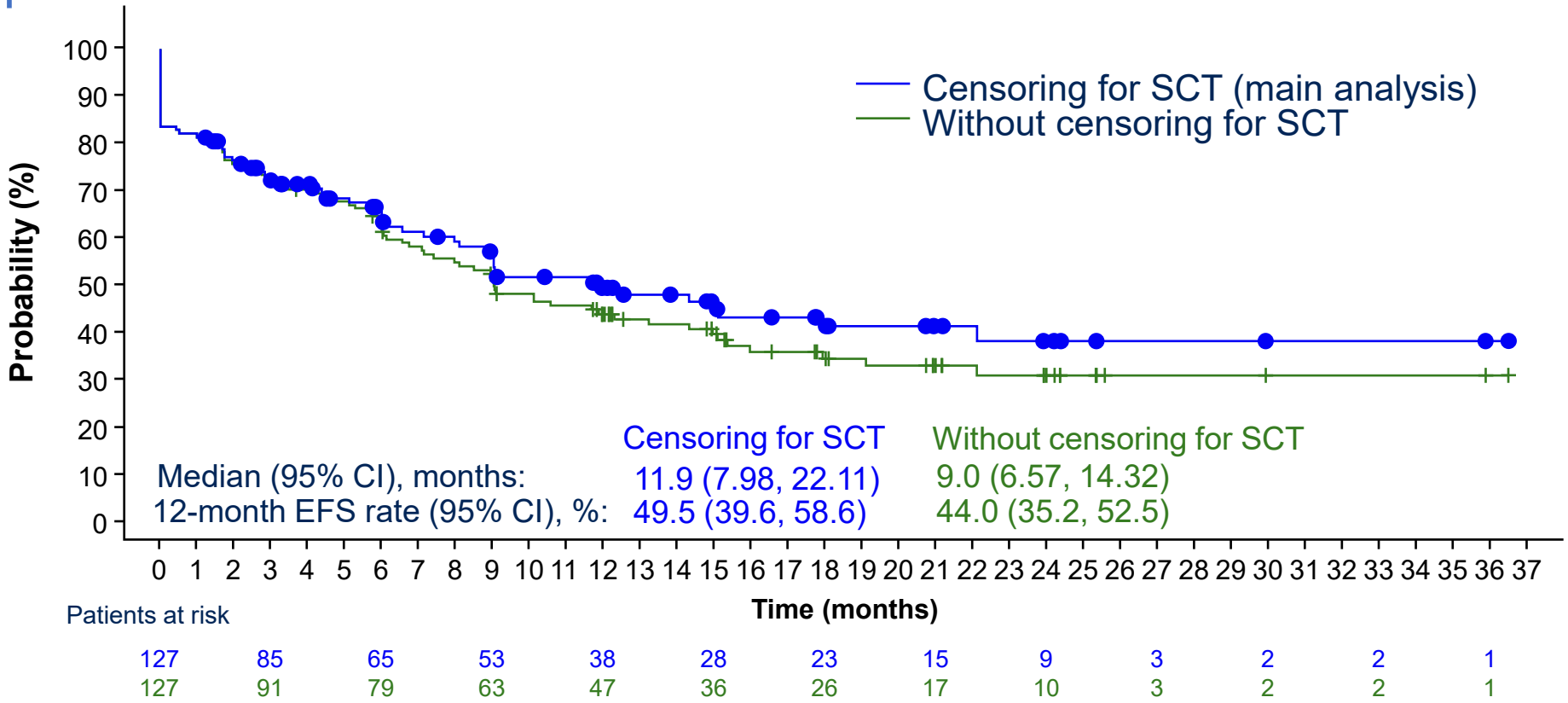
Data cut-off date:
February 7, 2024

Median follow-up:
21.5 months (range: 8.6–41.4)



Event-free survival

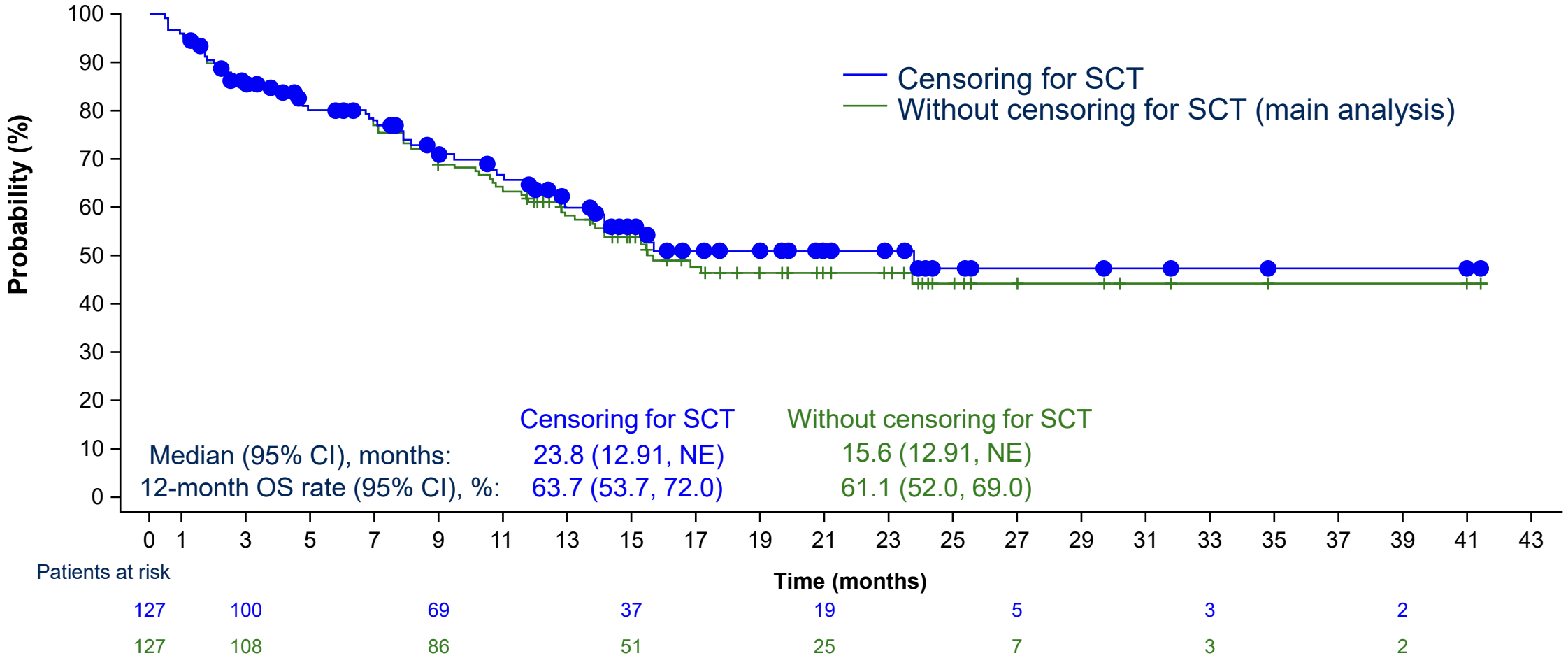
Subset of patients benefit from standalone treatment with obe-cel



- All (18/18) patients who had SCT in remission were MRD-negative
- 10/18 patients (55.6%) had ongoing CAR T persistence prior to SCT (n = 2 ongoing without event; n = 8 relapse or death)
- Characteristics similar between patients who did and did not undergo consolidative SCT

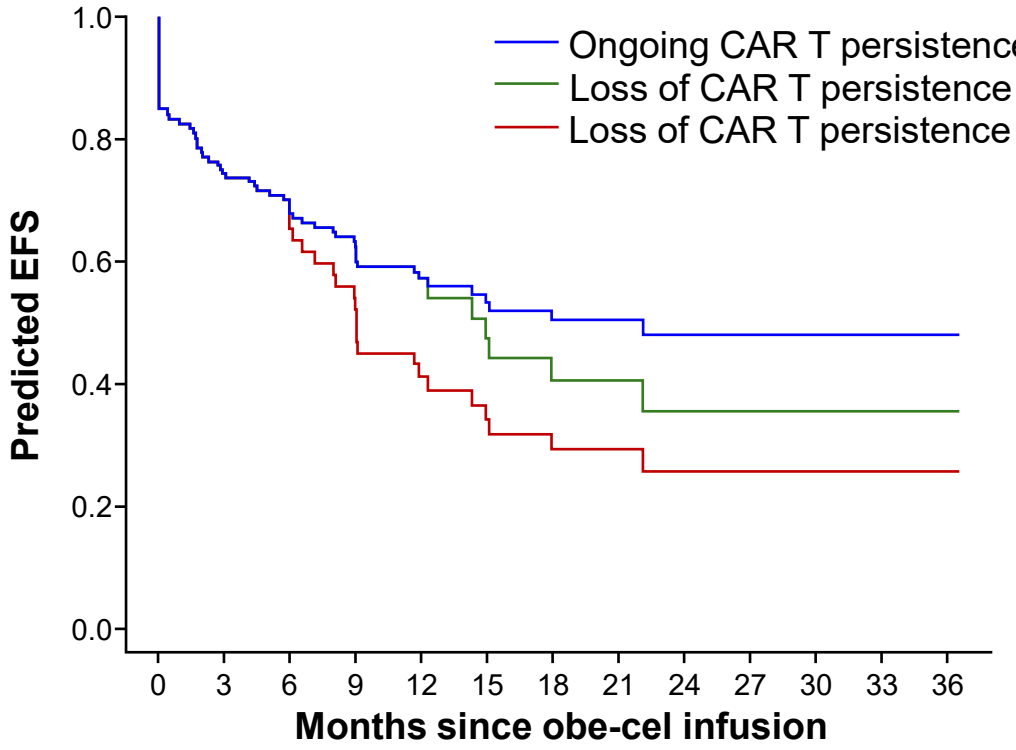
Overall survival

Potential long-term plateau

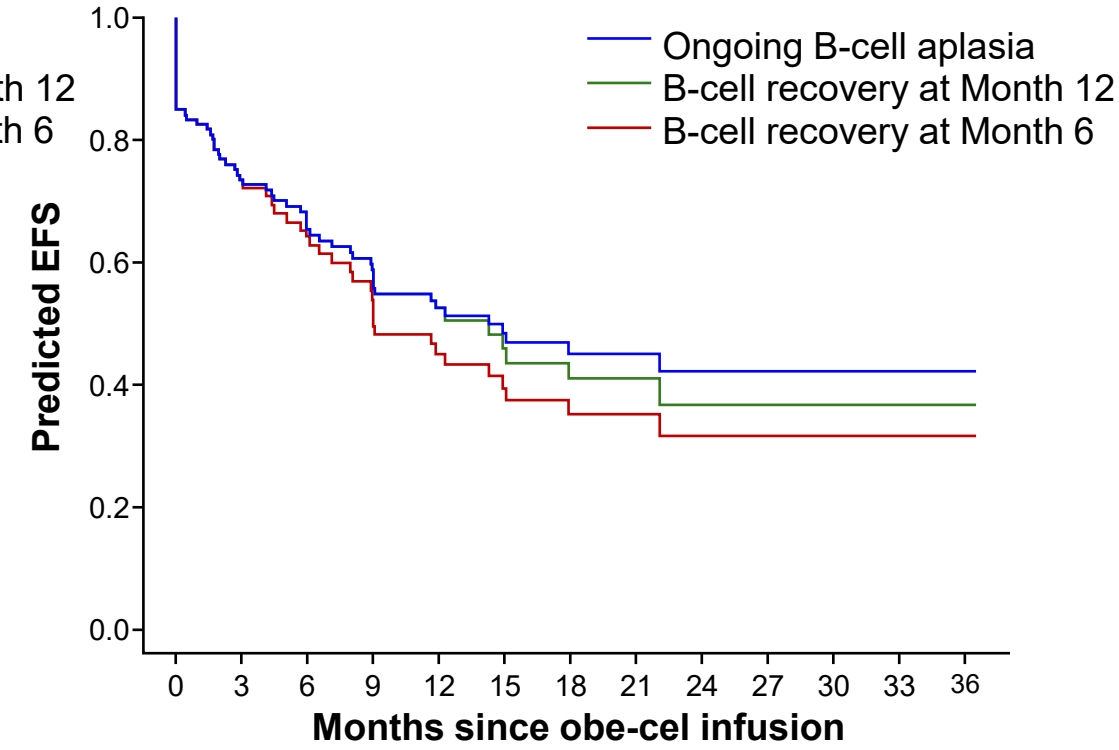


CAR T persistence and predicted relapse

Ongoing CAR T persistence correlates with long-term EFS



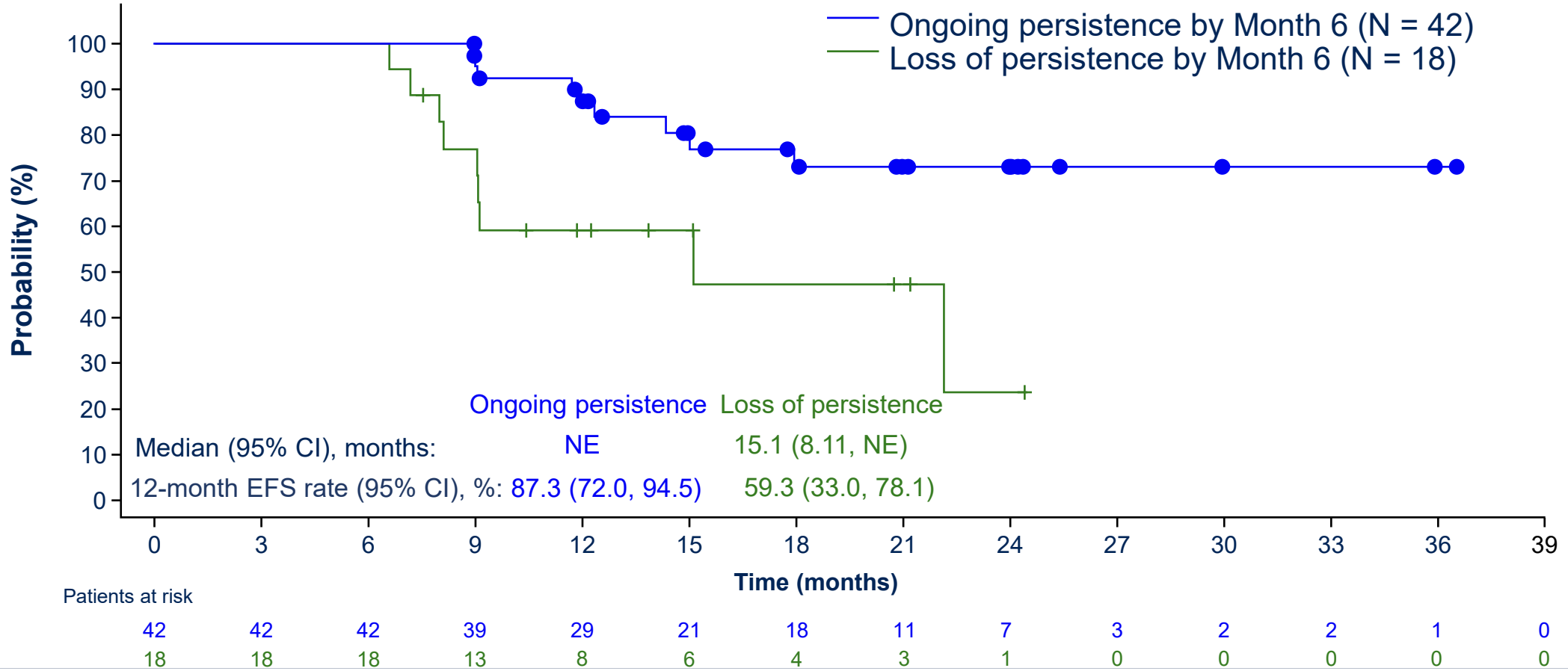
HR 2.7 (95% CI: 1.4, 5.3)



HR 1.7 (95% CI: 0.7, 3.8)

Landmark analysis among patients in ongoing remission at 6 months

Ongoing CAR T persistence at 6 months is associated with improved EFS



Conclusions

- 40% of responders in ongoing remission without subsequent SCT/other therapy, with a median follow-up of 21.5 months
- 12-month EFS and OS rates 49.5% and 61.1%, respectively
- Survival outcomes show potential of long-term plateau

- SCT consolidation in remission following obe-cel did not improve EFS or OS
- Ongoing CAR T persistence associated with improved EFS

- ***Obe-cel may be considered a standard of care for adult R/R B-ALL***

Acknowledgments

- The authors would like to acknowledge:
  - Patients, families, friends and caregivers
  - Study investigators and coordinators
  - Healthcare staff at the study sites
- Contact: Prof. Elias Jabbour ejabbour@mdanderson.org
- Third-party medical writing assistance, under the direction of the authors, was provided by Michaella Hulley, MSc, of Ashfield MedComms (Johannesburg, South Africa), an Inizio Company, and was funded by Autolus PLC

Newsflow

Dr. Christian Itin

Autolus planned news flow

Anticipated Milestone or Data Catalysts	Anticipated Timing
Obe-cel FELIX data update at ASCO, EHA & ASH 2024	June & December 2024
Obe-cel Marketing Authorization Application to MHRA	Second half 2024
Obe-cel U.S. FDA PDUFA target action date	November 16, 2024
Obe-cel in autoimmune disease – initial data from SLE Phase 1 study	Late 2024

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Thank you – Q&A