# THREE-YEAR FOLLOW-UP ON EFFICACY AND SAFETY RESULTS FROM PHASE 1 LUMMICAR STUDY 1 OF ZEVORCABTAGENE AUTOLEUCEL IN CHINESE PATIENTS WITH RELAPSED OR REFRACTORY MULTIPLE MYELOMA

C Fu [1], W Chen [2] , Z Cai [3], L Yan [1] , H Wang [2], J Shang [1], Y Wu [2], S Yan [1], W Gao [2], X Shi [1], X Han [3], F Tang [1], G Zheng [3], Y Wen [3], X Meng [4], W Zheng [4], H Wang [4], and Z Li [4]

1. The First Affiliated Hospital, Suzhou University, Suzhou, China; 2. Beijing Chao-Yang Hospital, Capital Medical University, Beijing, China; 3. The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China; 4. CARsgen Therapeutics Co. Ltd, Shanghai, China

LUMMICAR STUDY 1

## INTRODUCTION

- B-cell maturation antigen (BCMA) is an established target for multiple myeloma.
- Zevorcabtagene autoleucel (zevor-cel or CT053) is an autologous chimeric antigen receptor (CAR) T-cell product with a fully human BCMA-specific single chain variable fragment (25C2) with high binding affinity and high monomer ratio (Yang 2022).
- Phase 1 of LUMMICAR STUDY 1 was conducted in China (NCT03975907) evaluating zevor-cel in patients with relapsed or refractory multiple myeloma (R/R MM).
- Previously disclosed 1-year follow-up data (ASH 2021 Abstract 2821) demonstrated a tolerable safety profile with deep and durable responses in 14 patients with an ORR of 100% and a 78.6% stringent complete response/complete response (sCR/CR) rate (Chen 2021).
- Herein, we present the updated results with 3 years of follow-up after the last patient was infused.

## OBJECTIVES

- To evaluate the safety and tolerability of CT053 and to identify the recommended phase 2 dose.
- To evaluate the efficacy and safety of CT053.

## METHOD

- The phase 1 trial enrolled patients with a diagnosis of R/R MM, who had received at least 3 prior regimens including a proteasome inhibitor and an immunomodulatory drug (IMiD).
- A single infusion of zevor-cel (two dose levels, $100 \times 10^6$ CAR$^+$ T cells and $150 \times 10^6$ CAR$^+$ T cells) was administered 1–2 days after the completion of lymphodepletion.
- Response was assessed by investigator per the IMWG 2016 criteria.
- Bone marrow aspirates were tested for minimal residual disease (MRD) by the EuroFlow assay with a minimum sensitivity of 1 in $10^5$ nucleated cells.

## RESULTS

### Patient Characteristics

| Baseline characteristic | N=14 |
|---|---|
| Age, median (range), y | 54.0 (34, 62) |
| Sex | |
| Men, n(%) | 7 (50.0%) |
| Women, n(%) | 7 (50.0%) |
| Years since diagnosis, median (range) | 4.7 (1.2, 8.7) |
| Number of prior regimens | 6.0 (3-11) |
| Proteasome inhibitors | 14 (100%) |
| Immunomodulatory drugs | 14 (100%) |
| Stem cell transplantation | 11 (78.6%) |
| ECOG | |
| 0 | 7 (50%) |
| 1 | 7 (50%) |
| >1 | 0 |
| International Staging System, n(%) | |
| I or II | 12 (85.7%) |
| III | 2 (14.3%) |
| Cytogenetic high risk, n(%) | 7 (50%) |
| Extramedullary plasmacytoma, n(%) | 2 (14.3%) |
| Bone marrow plasma cells, n(%) | |
| < 50% | 11 (78.6%) |
| ≥ 50% | 3 (21.4%) |
| BCMA Expression Rate | |
| < 50% | 8 (57.1%) |
| ≥ 50% | 6 (42.9%) |

### Safety Summary

| Adverse event | N=14, n (%) |
|---|---|
| Treatment-related AEs (TRAEs) | 14 (100%) |
| Grade 3/4 hematologic TRAEs | 14 (100%) |
| Cytokine release syndrome (CRS), any grade | 13 (92.9%) |
| Grade 1 | 9 (64.3%) |
| Grade 2 | 4 (28.6%) |
| Grade 3/4 | 0 |
| Grade ≥3 neurologic TRAEs | 0 |
| ICANS, any grade | 0 |
| Grade ≥3 infection and infestation TRAEs | 3 (21.4%) |
| Grade 3 | 3 (21.4%) |
| Grade 4 | 0 |
| All serious adverse events (SAE) | 3 (21.4%) |
| Treatment-related SAE | 2 (14.3%) |
| Death due to TRAE | 0 |

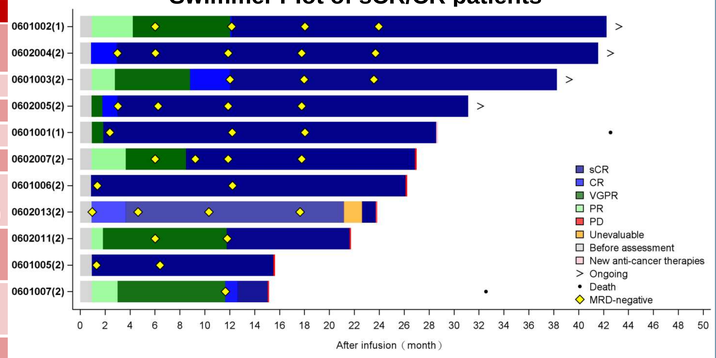
- 100% of patients experienced Grade 3 or 4 hematologic toxicities.
- 92.9% of patients experienced CRS (all Grade 1 or 2).
- Treatment-related SAEs occurred in 2 patients, which were pulmonary infection and tumor lysis syndrome, respectively
- No ICANS occurred; No deaths due to treatment related AEs; No second primary malignancy or autoimmune disease.
- All patients were negative for replication competent lentivirus.
- Two patients had died at Month 42.6 and 32.6, respectively, and both were unrelated to zevor-cel.

### Efficacy Summary

| | N=14 |
|---|---|
| Best Overall Response, n(%) | |
| sCR | 10 (71.4%) |
| CR | 1 (7.1%) |
| VGPR | 2 (14.3%) |
| PR | 1 (7.1%) |
| ORR, n(%) (95% CI) | 14 (100%) (76.84, 100.00) |
| CR/sCR rate, n(%) (95% CI) | 11 (78.6%) (49.20, 95.34) |
| VGPR or better rate, n(%) (95% CI) | 13 (92.9%) (66.13, 99.82) |
| DOR, Median (95% CI), Month | 24.1 (14.0, NE) |
| TTR, Median (range), Day | 28.0 (27, 29) |
| Time to CR or better Median (range), Day | 57.0 (27, 367) |
| MRD negativity within CR/sCR subjects ($<10^{-5}$), n(%) | 11 (100%) |

*CI, Confidence Interval; CR, Complete Response; DOR, Duration of Response; MRD, Minimal Residual Disease; NE, Not Evaluable; ORR, Objective Response Rate; PR, Partial Response; sCR, Stringent Complete Response; TTR, Time to Response; VGPR, Very Good Partial Response*

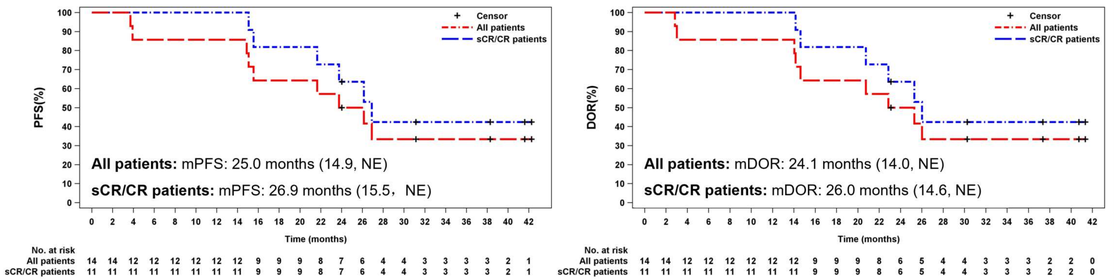
### Swimmer Plot of sCR/CR patients




*(1) represents the treatment group CT053 100x10$^6$, and (2) represents the treatment group CT053 150x10$^6$.*

- As of the data cut-off date, 4 patients with sCR have ongoing response;
- A total of 7 (50%) patients have response lasting over 24 months.

### Kaplan-Meier Plot of PFS and DOR




At a median follow up of 37.7 months (range: 14.8- 44.2) :

- The median PFS was 25 months in all subjects and 26.9 months in sCR/CR patients;
- The median DOR was 24.1 months in all subjects and 26.0 months in sCR/CR patients;
- The median OS was not reached, and 92.9% (n=13) of patients were alive at Month 36.

## CONCLUSIONS

At 3 years of follow-up of Phase 1 portion of the study, heavily pre-treated R/R MM patients maintained deep and durable responses after receiving a single infusion of zevor-cel, which showed a well-managed safety profile in the ongoing long-term follow-up.

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## REFERENCES

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