INTRODUCTION

BCMA-Directed CAR-T Cell Therapy: A Promising Strategy for Multiple Myeloma (MM) Treatment

Phase I Study of PHE885, a Fully Human BCMA-Directed CAR-T Cell Therapy for Relapsed/Refractory Multiple Myeloma Manufactured in ≤2 Days Using the T-Charge™ Platform

RESULTS

Baseline Characteristics of Patients

- As of data cutoff (October 1, 2021), 15 (100%) patients successfully received PHE885 and were eligible for safety and efficacy evaluation.
- Patients received the following fixed doses:
  - 5×10^6 (N=15) (%)
  - 14.3×10^5 (N=9) (%)
  - 5×10^6 (N=6) (%)
- No patients experienced grade ≥4 cytokine release syndrome

Clinical Responses to PHE885 ORR

- All but one patient achieved a clinical response:
  - At 2 (60%) CAR-T cell, 1 patient had no change in plasma cells present at baseline.
  - 1 patient had ongoing response at the time of data cutoff.
  - 2 patients died due to progressive disease

Clinical Response to PHE885 Over Time

- Clinical responses occur rapidly and deepen over time.
- SCD (100%) and CR (75%) were observed at 28 days.

PHE885 Safety Profile

- Dose-limiting toxicities in 2 patients:
  - Grade 4 increased serum creatinine in 1 patient (100%)
  - Grade 4 thrombocytopenia in 1 patient (66.7%)

Methods

- Patients with MM (N=15) to receive PHE885 in a Phase 1, open-label, single-arm, multiple-dose study.
- PHE885 is a novel, fully human BCMA-Directed CAR-T cell product consisting of an extracellular single-chain variable fragment (scFv) targeting BCMA, fused to CD3-ζ signaling domains, following CD19/CD19a co-engraftment and CD3ζ transduction.
- PHE885 is manufactured using the T-Charge™ platform, which allows for a 15-day manufacturing process.
- Here, we report initial clinical data from a Phase 1 clinical trial (NCT04318327) evaluating PHE885 manufactured using the T-Charge™ process and characterized at day 14 in vivo, suggesting a preserved T-cell stemness (T_{scm}) phenotype in broad-spectrum patients with cMM.

Conclusions

- PHE885 showed a manageable safety profile and encouraging clinical activity in patients with ≥3 cycles of treatment, including BCMA-directed treatment (Dexiu Bu and Anakinra for immunomodulation, chemotherapy, and anti-IL-6R monoclonal antibody).
- Additional data were collected in a long survival follow-up protocol under Health Authority guidance.

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DISCLOSURES

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REFERENCES
