Trial in progress: A phase I study of tumor-infiltrating lymphocytes (TILs) in advanced solid tumors used an optimized regimen: MIZAR trial

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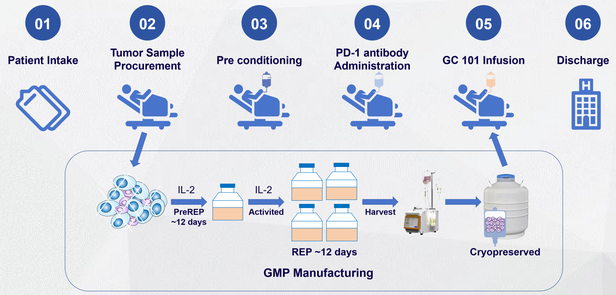
Background

Tumor-infiltrating lymphocytes (TILs) have shown great promise in solid tumors[1-4].

However, the clinical usefulness of TIL has been limited due to an intensive lymphodepletion regimen and high-dose intravenous interleukin-2 (IL-2) administration[5, 6].

We explore the low dose regimens of lymphodepletion and infusion, which without IL-2 administration in TIL therapy showed encouraging outcome in a case report[7].

Figure 1. TIL therapy procedure



Objective

To evaluate the safety and efficacy of optimized TIL-therapy regimen for the treatment of patients with advanced solid tumors.

MIZAR trial Overview

MIZAR trial (GC101 TIL-ST-01, NCT05417750) is a phase 1, open label, nonrandomized, multicohort, multicenter study evaluating GC101 in patients with advanced solid tumors.
The NMPA allowed an Investigational New Drug (IND) Application to proceed in April 2022.

Study Design and Treatment Regimen

Figure 2. MIZAR Trial Design

MIZAR trial (GC101 TIL-ST-01, NCT05417750)

- a phase 1, open lable, nonrandomized, multicohort, multicenter study
- patients with advanced solid tumors who have failed standard therapy.

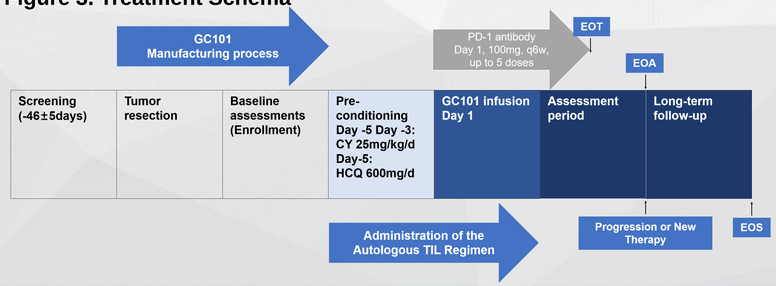
Phase 1a: solid tumors, 3+3 dose escalation

5.0×10^{9}	1.5×10^{10}	3.0×10^{10}	4.5×10^{10}

Phase 1b

- Cohort 1: Melanoma (n: 6~12)
- Cohort 2: Cervical cancer (n: 6~12)
- Cohort 3: HNSCC (n: 6~12)
- Cohort 4: NSCLC (n: 6~12)
- Cohort 5: Endometrial cancer (n: 6~12)

Figure 3. Treatment Schema



Endpoints

Primary endpoints: DLT, AE;
Secondary endpoints: ORR, DOR, DCR, PFS, OS.

Key Eligibility Criteria

- Patients with advanced metastatic solid tumors with clear pathological diagnosis, including melanoma, cervical cancer, head and neck squamous cell tumors, non-small cell lung cancer and endometrial cancer, etc..
- Patients must be ≥18 and ≤75 years
- ECOG PS 0-1 and an estimated life expectancy ≥3 months.
- With resectable lesion(s) for GC101 generation
- Enrolling with ≥1 remaining RECIST-measurable lesion(s)

References

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Disclosures

- This study and poster are sponsored by Shanghai Juncell Therapeutics Co., Ltd.
- HJ is Chief Technology Officer of Shanghai Juncell Therapeutics Co., Ltd.

Ethics Approval

The study was approved by the institutional review board at each site and was conducted in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines of National Medical Products Administration.

Abbreviations

AE, adverse event; CY, cyclophosphamide; DCR, disease control rate; DLT, dose-limiting toxicity; DOR, duration of response; ECOG PS, Eastern Cooperative Oncology Group Performance Status; EOA, End of assessment; EOS, end of study; EOT, End of treatment; GMP, Good Manufacturing Practice; HCQ, hydroxychloroquine; HNSCC, head and neck squamous cell carcinoma; IL-2, interleukin-2; IND, Investigational New Drug ; NMPA, National Medical Products Administration; NSCLC, non-small cell lung cancer; ORR, objective response rate; OS, overall survival; PD-1, programmed cell death protein-1; PFS, progression-free survival; RECIST, Response Evaluation Criteria in Solid Tumors; TIL, tumor-infiltrating lymphocyte

Poster presentation at the ESMO Immuno-Oncology Congress 2023; 6-8 December 2023; Geneva, Switzerland; for questions or comments please contact Qing Xu: xuqingmd@aliyun.com