# Adjuvant Therapy with Claudin18.2-specific CAR T Cells (Satri-cel) in High-Risk Pancreatic Cancer (CT041-ST-05)

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## BACKGROUND

- Pancreatic ductal adenocarcinoma (PDAC) is characterized by a dismal prognosis even among surgically resected patients. Local recurrence and distant metastasis are common, often leading to treatment failure.
- Elevated carbohydrate antigen 19-9 (CA19-9) levels post resection indicate aggressive tumor biology and higher risk of recurrence. A narrow median interval of approximately 3 months between CA19-9 elevation and radiological recurrence highlights the urgent needs for novel strategies.[1,2]
- CT041/satricabtagene autoleucel (satri-cel), a claudin (CLDN)18.2-specific CAR T-cell therapy, showed promising anti-tumor activities in patients with refractory metastatic pancreatic cancer[3].

## AIMS

This was an open-label, single-arm, multicenter, phase Ib trial, which aimed to assess the efficacy and safety of satri-cel as an adjuvant therapy in patients with high-risk PDAC.

## METHODS

Patients with CLDN18.2 positive PDAC who have undergone curative-intent resection, with abnormal CA19-9 after 3 months adjuvant chemotherapy and no evidence of recurrence were enrolled. Satri-cel of $250\times10^6$ cells was infused after adjuvant chemotherapy.

The primary endpoint was disease-free survival (DFS). Secondary endpoints included overall survival (OS), DFS rate, safety and pharmacokinetics.

A total of 20 patients were planned to be treated with satri-cel.

### Key eligibility criteria

- Patient aged 18 to 79 years old;
- Histologically confirmed PDAC;
- Macroscopic complete tumor removal (R0 or R1 resection);
- Postoperative pathological stage (pTNM): T1-3, N0-2, M0;
- Positive expression of CLDN18.2 by immunohistochemistry (IHC) staining (≥2+, ≥40%);
- Abnormal CA19-9 level after 3 months of standard adjuvant chemotherapy;
- No evidence of metastasis or local recurrence;
- ECOG performance status score 0-1.

## CONCLUSIONS

In this preliminary analysis with a relatively limited sample size, satri-cel showed promising efficacy signals as adjuvant therapy for PDAC patients, evidenced by significant reductions in CA19-9 levels in the majority of patients and encouraging long-term survival trends.

## ACKNOWLEDGEMENTS

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## Disclosure Statement

The first and presenting author declares no conflicts of interest.

## References

[1] Pancreatology. 2019 Mar;19(2):302-306.

[2] Sci Rep. 2020 Jan 28;10(1):1332.

[3] J Clin Oncol. 2024 Jul 20; 42(21):2565-2577.

## RESULTS

### Patient characteristics

- From Sep 15, 2023 to April 11, 2025 (data cut-off date), six patients received satri-cel infusion and completed at least 4 weeks of follow-up.
- The majority were male (83.3%), with a median age of 64.5 years.
- Most tumors were located in the pancreatic head (66.7%).
- Pathological stage ranged from IB to III. R0 resection was achieved in 66.7% of patients, while lymphovascular and perineural invasion were observed in 33.3% and 100% of patients, respectively.
- All patients had an ECOG performance status of 1. (Table 1)

### Treatment

- Five patients received the original adjuvant chemotherapy as bridging therapy. The remaining one had already completed the full course of adjuvant therapy and thus did not receive bridging therapy.
- Preconditioning lymphodepletion (fludarabine 30 mg/m² D1-3, cyclophosphamide 250 mg/m² D1-3 and nab-paclitaxel 100 mg D2) was administered in all patients before each satri-cel infusion.
- All six patients received at least one dose of satri-cel of $250\times10^6$ cells, including one patient subsequently received a second infusion at the same dose.
- Time from surgical resection to the first infusion of each patient was around 6-10 months.

### Safety

- All patients developed Grade 1 or 2 cytokine release syndrome (CRS) after the first satri-cel infusion. For the second infusion administered in one patient, grade 3 CRS accompanied by hypotension was observed, which resolved within three days following tocilizumab treatment. (Table 2)
- Tocilizumab was administered in 71.4% (4/6) of patients as the treatment for CRS.
- All patients experienced gastrointestinal disorders, such as nausea and vomiting, which were all Grade 1 or 2. Only one case of Grade 3 gastritis occurred.
- No immune effector cell-associated neurotoxicity syndrome (ICANS) was reported.

**Table 1 | Baseline Characteristics**

| Baseline Characteristics | Total (N=6) |
|---|---|
| **Median age (range), year** | 64.5 (51–71) |
| **Male, n (%)** | 5 (83.3) |
| **Tumor location, n (%)** | |
| Head | 4 (66.7) |
| Other | 2 (33.3) |
| **Primary tumor status, n (%)** | |
| pT2 | 4 (66.7) |
| pT3 | 2 (33.3) |
| **Nodal status** | |
| pN0 | 3 (50.0) |
| pN1 | 2 (33.3) |
| pN2 | 1 (16.7) |
| **Pathological stage, n (%)** | |
| IB | 1 (16.7) |
| IIA | 2 (33.3) |
| IIB | 2 (33.3) |
| III | 1 (16.7) |
| **Status of surgical margins, n (%)** | |
| R0 | 4 (66.7) |
| R1 | 2 (33.3) |
| **Lymphovascular invasion, n (%)** | 2 (33.3) |
| **Perineural invasion, n (%)** | 6 (100) |
| **Adjuvant chemotherapy, n (%)** | |
| Nab-paclitaxel+Gemcitabine | 3 (50.0) |
| mFOFIRINOX | 2 (33.3) |
| Gemcitabine+Capecitabine | 1 (16.7) |
| **CLDN18.2 expression*, n (%)** | |
| Medium expression | 2 (33.3) |
| High expression | 4 (66.7) |
| **ECOG, n (%)** | |
| 0 | 0 |
| 1 | 6 (100) |

* Medium expression was defined as intensity 2+ or 3+ with a percentage of 40% (inclusive) to 69%, and high expression was defined as intensity 2+ or 3+ with a percentage of ≥70%.

**Table 2 | TEAE in ≥25% of patients & all Grade ≥3 TEAE**

| Preferred term, n (%) | Grade ≥3 | Total (N=6) |
|---|---|---|
| **Hematology** | | |
| Leukopenia | 5 (83.3) | 5 (83.3) |
| Neutropenia | 3 (50.0) | 5 (83.3) |
| Anemia | 0 | 4 (66.7) |
| Thrombocytopenia | 0 | 3 (50.0) |
| **GI disorders** | | |
| Vomiting | 0 | 5 (83.3) |
| Nausea | 0 | 4 (66.7) |
| Abdominal discomfort | 0 | 2 (33.3) |
| Constipation | 0 | 2 (33.3) |
| Diarrhoea | 0 | 2 (33.3) |
| Dysphagia | 0 | 2 (33.3) |
| Retching | 0 | 2 (33.3) |
| Gastritis | 1 (16.7) | 1 (16.7) |
| **Immune system disorders** | | |
| CRS | 1 (16.7) | 6 (100) |
| **Others** | | |
| Pyrexia | 1 (16.7) | 6 (100) |
| Rash | 1 (16.7) | 6 (100) |
| Hyponatraemia | 0 | 6 (100) |
| Asthenia | 0 | 6 (100) |
| Weight decreased | 1 (16.7) | 5 (83.3) |
| Hypoalbuminaemia | 0 | 5 (83.3) |
| Decreased appetite | 1 (16.7) | 4 (66.7) |
| Hypocalcaemia | 0 | 4 (66.7) |
| Hypokalaemia | 3 (50.0) | 3 (50.0) |
| CRP increased | 0 | 3 (50.0) |
| Hypotension | 1 (16.7) | 2 (33.3) |
| Hepatic function abnormal | 1 (16.7) | 2 (33.3) |
| Faecal occult blood positive | 0 | 2 (33.3) |
| Procalcitonin increased | 0 | 2 (33.3) |
| Hypochloraemia | 0 | 2 (33.3) |
| Hypoxia | 0 | 2 (33.3) |
| Productive cough | 0 | 2 (33.3) |
| Oedema peripheral | 0 | 2 (33.3) |

### Efficacy

- With a median follow-up of 6.05 months (IQR 4.04, 8.38) since satri-cel infusion, only one patient experienced disease recurrence, while others are still under disease free (Fig. 1). The median DFS and median OS from satri-cel infusion were both not reached. Notably, one patient who has completed 52-week follow-up post satri-cel infusion is still under follow-up without disease recurrence (Fig. 2).
- Moreover, significant decline in CA19-9 levels post infusion was observed in five (83.3%) patients, with reductions ranging from 51.3% to 96.1%. (Fig. 3)

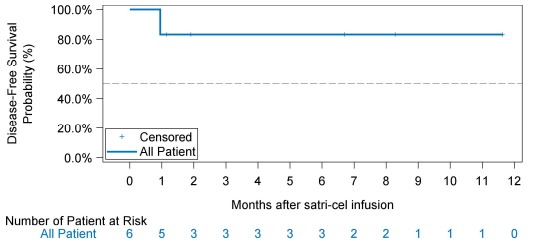


**Fig. 1 | Kaplan–Meier Estimates of Disease-free Survival**

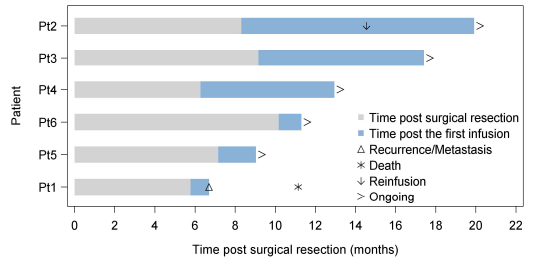


**Fig. 2 | Swimmer plot**

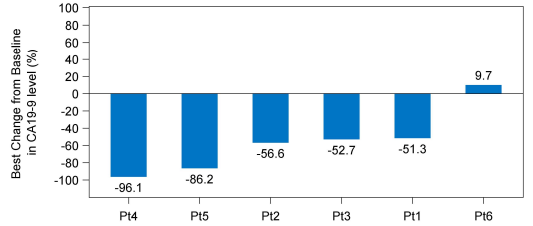


**Fig. 3 | Best Change from Baseline in CA19-9 level**

### Pharmacokinetics

- The median $C_{max}$ of CAR copy numbers after the first satri-cel infusion was 7,483 copies per microgram of genomic DNA (gDNA; Range: 1,120-50,800);
- The median $T_{max}$ was 10 days (Range: 7-34) and the median persistence in peripheral blood was 24.5 days (Range: 13-34). (Fig. 4)

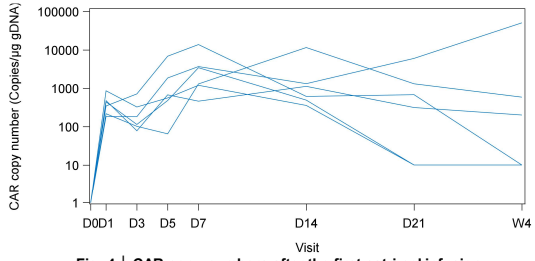


**Fig. 4 | CAR copy numbers after the first satri-cel infusion**