Multicenter Phase 2 Trial of Yttrium-90 Radioembolization with Capecitabine-Temozolomide for Grade 2 Liver-Dominant Metastatic Neuroendocrine Tumors: interim report

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Introduction

Grade 2 NET liver metastases have less durable PFS than low-grade tumors following embolotherapy (12 mo vs. 18 mo, Chen 2017). Capecitabine-Temozolomide (CapTem) is an effective regimen in NETs and both drugs are radiosensitizers. A feasibility study of integrated CapTem and Y90 transarterial radioembolization (TARE) demonstrated tolerability with expected additive toxicities and encouraging ORR and PFS (Soulen 2018, 2024). A multi-center phase 2 trial was initiated (NCT04339036).

Materials & Methods

Therapy consisted of capecitabine 600 mg/m2 twice daily for 14 days and temozolomide 150-200 mg/m2 in two divided doses on day 10-14, with 14 days between cycles. During the initial cycle of chemotherapy, the patient underwent simulation angiography with Tc99m-MAA SPECT. The dominant lobe was treated on day 7 of the second cycle of CapTem. Y90 microspheres (SIR-Spheres; Sirtex Medical) were prescribed according to the body surface area method. Patients with bilobar disease had the other lobe treated on day 7 of the third or fourth cycle.
CapTem was continued until progression or intolerance. Clinical and laboratory assessment was done monthly and imaging performed every 3 months.

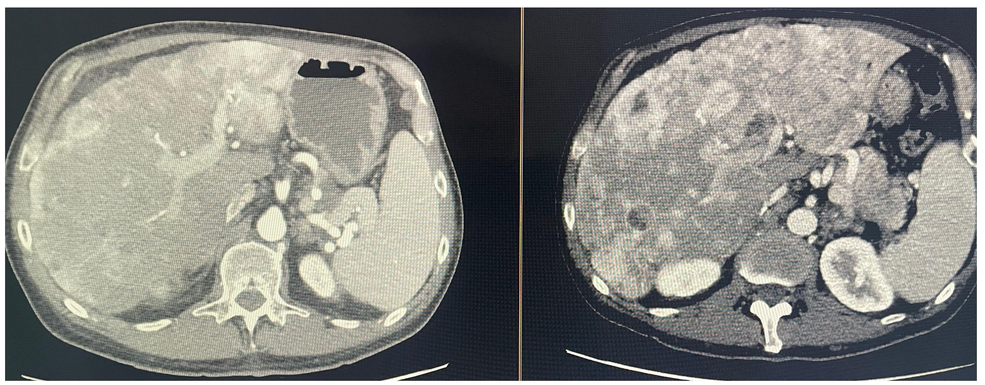
Results

- 51 patients were accrued from 2022-25, 30 (60%) male
- Primary sites of disease were pancreas (32), midgut (14) and other (3)
- All patients completed prescribed TARE
- Mean duration of CapTem 12 months to date (17 patients still on therapy)
- Four G4 cytopenias requiring dose reduction
- G3 toxicities hematologic (13), GI (6), mucositis (1), PPE (1)

Response at 1st Imaging 3 months post-TARE (N=34)

CR	0
PR	15 (44%)
SD	13 (38%)
PD	5 (15%)
Unevaluable	1

Post-treatment Baseline



Conclusions

1. Multi-center experience suggests that CapTemY90 is feasible and safe for Grade 2 liver-dominant metastases
2. The trial completed accrual with 24-month follow-up in progress

Chen JX, et al: Embolotherapy for Neuroendocrine Tumor Liver Metastases: Prognostic Factors for Hepatic Progression-Free Survival and Overall Survival. Cardiovasc Intervent Radiol 2017;40:69-80
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Soulen MC, et al: Integrated capecitabine-temozolomide with radioembolization for liver-dominant G2 NETs: long-term outcomes of a single-institution retrospective study. Cardiovasc Intervent Radiol 2024;47:60-68