Tele-PancFit: Video-Supervised Exercise Prehabilitation For Patients with Resectable Pancreatic Cancer, a Clinical Trial (actively enrolling)

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INTRODUCTION:

In resectable pancreatic ductal adenocarcinoma (PDAC), the combination of neoadjuvant chemotherapy (NACT) and surgical resection followed by adjuvant chemotherapy imparts the best survival. We demonstrated that exercise during NACT can **maintain skeletal muscle** and **improve physical function** (Fig 1). Also, in our previous studies, exercise caused **improved tumor vasculature organization** in mice and patients, which may **improve chemotherapy delivery** (Fig 2). In Tele-PancFit, rigorous strength training and aerobic exercise will be utilized to **optimize body composition and function**, leading to PDAC treatment completion. We hypothesize that Tele-PancFit will **improve rates of initiation of adjuvant chemotherapy**, ultimately improving patient survival (Fig 1).

METHODS:

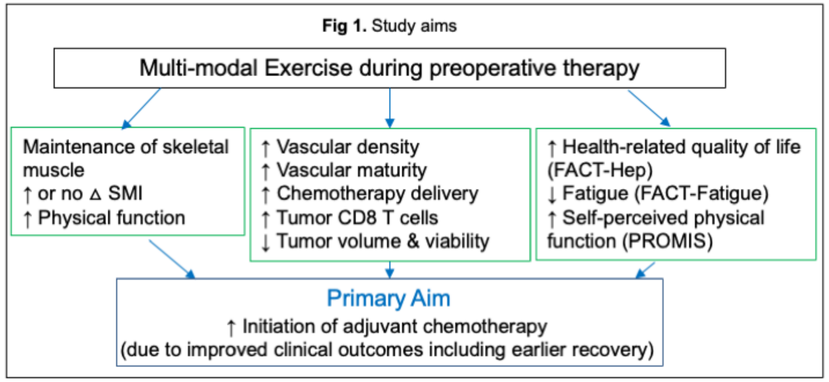
In this planned multi-site trial (ClinicalTrials.gov NCT05836870), 290 participants receiving 2-4 months of NACT will randomized to (Fig 3): (1) tele-exercise intervention including supervised resistance training and remotely monitored aerobic exercise or (2) usual care encouragement to exercise. Participants from all study sites who are randomized to the intervention will participate in 2x/wk individualized, progressive resistance training performed with certified exercise trainers via video conference. Moderate-intensity aerobic exercise based on the Borg RPE will be prescribed, with aerobic exercise progressed by review of activity trackers. The **primary outcome, the rate of initiation of adjuvant chemotherapy**, will be compared between groups. Participants randomized to either group will undergo testing at baseline (T0), preoperative restaging (T1), and postoperatively (T2a) to measure changes in these secondary measures: health-related quality of life (FACT-Hep), fatigue (FACT-Fatigue), skeletal muscle index (abdominal CT scans), malnutrition assessments (PGSGAsf), and vascular remodeling and immune cell infiltration in the tumor.

RESULTS:

Pending results. One of the three clinical trial sites is actively enrolling patients.
We've enrolled, randomized 16 study participants (as of June 5, 2024): Arm A (n=8) and Arm B (n=8). 37.5% Female; #142/ 164 (86.6%) exercise sessions completed to-date.

Lille, France, June 27 - 29, 2024, MASCC/AFSOS/ISOO Annual Meeting

Fig 1. Study aims



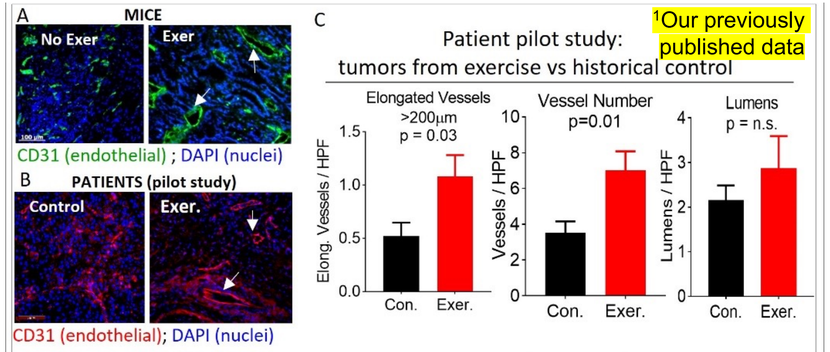


Fig 2. Exercise likely improves PDAC vessel function in patients. A,B) Representative images of tumors from control or exercise A) mice or B) patients. White arrows show open lumens (non-collapsed vessels). Patient samples obtained in a single arm pilot exercise intervention for patients with PDAC. Exercise occurred during neoadjuvant therapy prior to surgery. C) Relative to historical controls (n=17), tumors from patients in the pilot exercise intervention (n=23) had significantly more elongated vessels and total vessels, and a trend toward more open lumens.

[1]Florez Bedoya CA, Cardoso ACF, Parker N, et al. Exercise during preoperative therapy increases tumor vascularity in pancreatic tumor patients. *Sci Rep.* 2019;9(1):13966.

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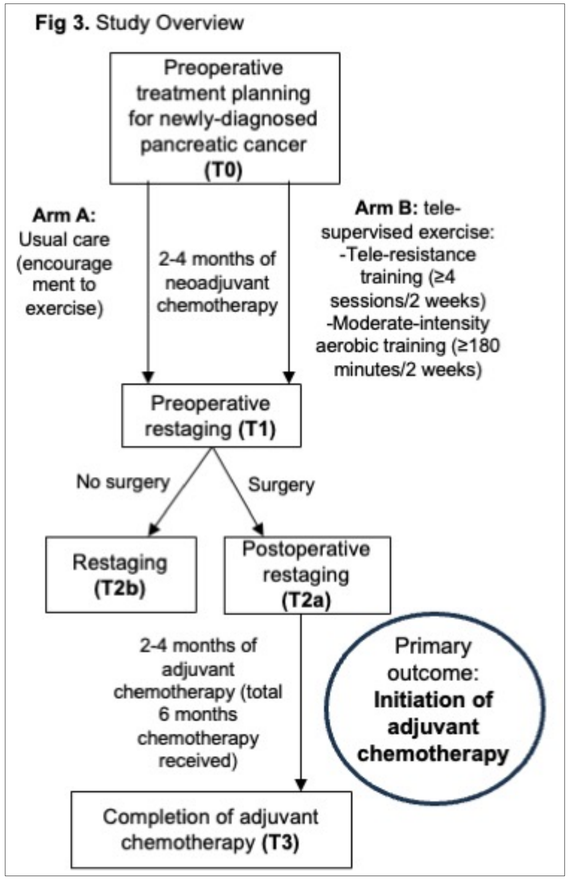
Fig 3. Study Overview



CONCLUSIONS:

Preoperative exercise during NACT is highly accepted. This study may establish the vital role of exercise programming in clinical care for PDAC with a broad impact on tumor biology, physical function, and clinical outcomes.