

AB015. S015. Circulating tumor cells dynamics in pancreatic adenocarcinoma correlate with disease status: data from a prospective trial

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Background: Previous retrospective studies demonstrated that circulating tumor cells (CTCs) subtypes in patients with pancreatic ductal adenocarcinoma (PDAC) correlate with disease-specific survival. Herein, we report results of a prospective observational trial on CTC dynamics to assess their clinical significance.

Methods: The CLUSTER trial is a prospective longitudinal study on PDAC CTC dynamics (NCT02974764). Multiple peripheral blood samples are collected from 160 consecutively enrolled patients with PDAC diagnosis. CTCs are enriched using an isolation-by-size assay, and their phenotype is characterized by immunofluorescence.

Results: Two major CTC subtypes are identified in all

patients: epithelial CTCs (eCTCs) and mesenchymal CTCs (mCTCs). Patients who previously received neoadjuvant chemotherapy have significantly lower total CTCs (tCTCs) and mCTCs, compared to untreated patients eligible for upfront resection ($P < 0.001$). In multivariable logistic regression analysis, preoperative numbers of tCTCs and mCTCs are the only predictors of early recurrence and disease-associated mortality, within 12 months from surgery ($P = 0.03$). Surgical resection of the primary tumor results in significant reduction in CTC burden across all cell subtypes ($P < 0.001$). Longitudinal monitoring of CTCs postoperatively shows an increase in CTC numbers within a median time of 2 months, prior to radiological evidence of disease recurrence.

Conclusions: We report novel findings regarding CTCs from a large prospective trial in patients undergoing PDAC resection. CTC dynamics reflect response to treatment and progression of disease, providing important information on clinical outcomes, not available by current tumor markers and imaging.

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