**Detecting pancreatic cancer earlier: identifying type 3c diabetes in individuals newly diagnosed with type 2 diabetes**

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**Introduction**: Over 40% of PDAC patients have diabetes mellitus (DM); up to 80% have glucose intolerance. PDAC-associated DM (PDAC-DM) can precede cancer diagnosis by up to 3 years. Approximately 1% of individuals with new-onset DM have PDAC, it is therefore necessary to differentiate PDAC-DM (type 3c) from the more common type 2 DM for screening to be feasible in this high-risk group.

**Aim**: To develop a protein panel capable of identifying type 3c DM in individuals newly diagnosed with type 2 DM.

**Methods**: A comprehensive mass spectrometry-based discovery program, comprising >500 pre-diagnostic, diagnostic and control samples, identified 25 differentially regulated markers which were significantly enriched for an association with diabetes. Candidate markers were assessed using immunoassays in independent training (n=140) and validation (n=220) sets, which included a group of individuals newly diagnosed (< two years) with type 2 DM. Performance characteristics were obtained by ROC analysis.

**Results**: Of 19 markers evaluated to-date, seven showed significant differences between PDAC and DM or healthy subjects (p ≤0.05). The three most promising markers were selected for validation as future components of a diagnostic panel for the identification of type 3c DM.

**Conclusions**: The validated panel including CA19-9 could enrich those individuals with new-onset DM at the highest risk of a subsequent diagnosis of PDAC, enabling them to be selected for clinical evaluation for PDAC.