INPLASY

The correlation of computed tomography (CT)-based body composition and survival in pancreatic cancer patients

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Supe, L; Rizzo, S.

Corresponding author:
Stefania Rizzo

stefania.rizzo@eoc.ch

Author Affiliation:
Ente Ospedaliero Cantonale.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202610026

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 7 January 2026 and was last updated on 7 January 2026.

INTRODUCTION

Review question / Objective Does body composition measured by computed tomography help to predict overall survival in pancreatic cancer patients?

Rationale A reduction of lean body mass, also referred to as sarcopenia, is highly prevalent in pancreatic cancer patients, affecting approximately 30-65% of patients at diagnosis depending on the diagnostic criteria used. With this systematic review we want to critically analyze the existing literature to understand whether body composition measurements extracted from CT scans, can serve as reliable prognostic indicators for PC outcomes, such as overall survival.

Condition being studied Body composition of pancreatic cancer patients.

METHODS

Search strategy ["Pancreatic Neoplasms"[Mesh] OR "pancreatic cancer" OR "pancreatic tumour" OR "pancreatic carcinoma"] AND [["Body Composition"[Mesh] OR "body composition" OR "muscle mass" OR "sarcopenia" OR "adiposity" OR "fat mass" OR "lean body mass" OR "BMI" OR "body mass index"] AND ["Survival Analysis"[Mesh] OR "survival" OR "prognosis" OR "survival rate" OR "mortality" OR "outcome"]] for PubMed and TITLE-ABS-KEY["pancreatic cancer"] AND TI-TLE-ABS-KEY["body composition" OR "sarcopenia" OR "muscle mass" OR "fat mass" OR "adipos-ity" OR "BMI"] AND TITLE-ABS-KEY["outcomes" OR "survival" OR "prognosis" OR "treatment response"]
Pubmed; Scopus.

Participant or population Adult patients with pancreatic cancer.

Intervention Computed Tomography.

Comparator N/A.

Study designs to be included Randomized, non-randomized and observational studies will be included.

Eligibility criteria Exclusion criteria: Case reports; animal studies; reviews.

Information sources Only published studies will be sought. The main databases to be searched are PubMed and Scopus.

Main outcome(s) The main outcome of this systematic review is the correlation between body composition parameters and overall survival in pancreatic cancer patients.

Data management For each eligible article, information collected will be basic study data (including authors, country of origin, year of publication, study design prospective or retrospective); population characteristics (such as number of patients, sex, age and sarcopenic status); body composition features extracted from CT scans, such as skeletal muscle (SKM), VAT, SAT, muscle mass (MM), SMI, mean muscle attenuation (MMA), total adipose tissue (TAT), intramuscular adipose tissue (IMAT), vis-ceral to muscle ratio (VMR), visceral to subcutaneous adipose tissue area (VSR), subcuta-neous fat area (SFA), visceral fat area (VFA), subcutaneous fat area (SFA), total fat mass (TFM), total fat area (TFA), skeletal muscle density (SMD), Skeletal muscle radiodensity (SMRD), fatty muscle fraction (FMF), intramuscular fat fraction (IMFF), visceral adipose tissue index (VATI), subcutaneous adipose tissue index (SATI); association of body composition features and survival.

Quality assessment / Risk of bias analysis The overall quality of the included studies will be critically evaluated based on the revised "Quality Assessment of Diagnostic Accuracy Studies" tool (QUADAS-2).

Strategy of data synthesis We will evaluate the body composition indicators and combine them according to their definitions and formulas, in orderto create classes (for example Fatty muscle infiltration will include FMF, IMAC, IMAT, IMATI, IMFA, IMFF; muscleattenuation will include MA, MD, MMA, PMD, RA, SMD, SMRD; muscle mass will include PMA, SKM, SMA; skeletalmuscle indices (SMI), will include SMI, ASMAH, PMAH, PMTH, TP, and so on).

Subgroup analysis No subgroup analyses performed.

Sensitivity analysis No sensitivity analyses performed.

Language restriction English.

Country(ies) involved Switzerland.

Keywords body composition; sarcopenia; adiposity; pancreatic cancer; survival.

Dissemination plans Publication on Tomography (MDPI journal).

Contributions of each author

Author 1 - Lena Supe - Conceptualization; methodology; software; formal analysis; data curation; original draft preparation; review and editing.
Email: lena.supe@usi.ch
Author 2 - Stefania Rizzo - Conceptualization; methodology; software; resources; original draft preparation; review and editing; visualization; supervision.
Email: stefania.rizzo@eoc.ch