nutritional assessment revealed severe weight loss (18.44% over 6 months), low Body Mass Index (19.9 kg/m^2) and a low hand grip strength (10 kg). The patient was classified with severe malnutrition by the Patient-Generated Subjective Global Assessment (PG-SGA). Cachexia was diagnosed according to both Global Leadership Initiative on Malnutrition – GLIM criteria (weight loss, low BMI, low muscle mass, reduced food intake, and systemic inflammation evidenced by a neutrophil-to-lymphocyte ratio [NLR] of 11.5) and Fearon criteria (weight loss, low BMI, low muscularity, and inflammation). Body composition assessment by computed tomography at the level of the third lumbar vertebra demonstrated low muscle mass (Skeletal Muscle Index -SMI of 34.6 cm^2/m^2). Preoperative plasma analysis using multiplex technology revealed elevated levels of GDF-15 (1825.76 pg/mL), associated with an altered inflammatory and metabolic profile, including IL-6 of 4.51 pg/mL, TNF-a of 2.64 pg/mL, interferon-? of 2.54 pg/mL, and insulin of 265.48. During follow-up, the patient experienced disease progression and died of sepsis, with an overall survival of 9 months. The study was approved by the local Ethics Committee (CAAE:76237023.0.0000.5404). **Discussion:** Although the patient underwent standard imaging procedures during initial staging, no radiological evidence of metastatic disease was identified. However, she already exhibited a preoperative phenotype characterized by systemic inflammation, low skeletal muscle mass, severe malnutrition, and established cachexia, conditions consistently associated with poorer prognosis in gastric cancer. The integration of imaging findings with body composition analysis, inflammatory biomarkers, and comprehensive nutritional assessment tools enabled the early identification of a high-risk clinical and nutritional profile that was not captured by anatomical staging alone. Elevated GDF-15 levels further support its role as a mediator of anorexia, muscle wasting, and adverse clinical outcomes, reinforcing its potential value as a prognostic biomarker. **Conclusion:** This case highlights the importance of integrating nutritional status, body composition, and inflammatory and metabolic biomarkers into the initial assessment of patients with gastric cancer. The presence of cancer cachexia may indicate occult metastatic disease, particularly peritoneal carcinomatosis not detected by conventional imaging, allowing earlier identification of patients at higher prognostic risk and supporting more individualized clinical decision-making.

Keywords: Cachexia, Body composition, Stomach neoplasms, Nutrition assessment, Inflammation mediators.

Conflicts of interest: The authors declare that they have no conflicts of interest.

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71

18F-PSMA PET/CT IN THE MULTIMODAL ASSESSMENT OF METASTATIC GASTRIC ADENOCARCINOMA: A CASE REPORT

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Introduction: The expression of Prostate Specific Membrane Antigen (PSMA) in the neovascular endothelium of non-prostatic tumors has presented new diagnostic perspectives. This report describes a young female patient with metastasis from gastric adenocarcinoma who underwent 18F-PSMA PET/CT during staging. **Case Report:** A 42-year-old female with no prior oncologic history was diagnosed with metastatic gastric adenocarcinoma (cT4bN3M1). As part of an institutional clinical trial, she underwent 18F-FDG and 18F-PSMA PET/CT before treatment initiation. Imaging revealed central nervous system (CNS) involvement, non-regional lymphadenopathy, bone metastasis and muscle implants. In the primary tumor, 18F-FDG uptake was higher than 18F-PSMA (SUVmax 23.5 vs. 6.4). A 1.5 cm brain metastasis in the left frontal lobe showed substantial uptake in both studies (SUV max 9.1 for PSMA vs. 15.4 for FDG). Notably, 18F-PSMA exclusively identified additional focal areas in the right frontal and temporal lobes (SUV max 9.2), further imaging studies are pending. Additionally, a T6 vertebral lesion (SUVmax 4.8) was present in the PSMA study and was occult on 18F-FDG PET/CT. The patient was referred for CNS radiotherapy and initiated palliative chemotherapy with capecitabine and oxaliplatin. **Discussion:** The clinical utility of PSMA PET/CT in gastric cancer remains poorly explored in the literature. In this case, PSMA PET/CT demonstrated significant uptake in CNS and bone lesions, suggesting sensitivity for detecting specific metastatic sites through tumor neovasculature imaging. **Conclusion:** 18F-PSMA PET/CT represents a promising diagnostic tool in non-prostate malignancies and may provide incremental diagnostic value when used in conjunction with 18F-FDG PET/CT. Further clinical trials investigating the role of PSMA-targeting tracers in gastrointestinal cancers are warranted.

Keywords: Metastatic gastric cancer, 18F-PSMA PET/CT, 18F-FDG PET/CT, Multimodal imaging.

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72

THERANOSTIC APPLICATION OF PSMA IN ADENOID CYSTIC CARCINOMA: ^{18}F-PSMA PET/CT IMAGING AND ^{177}LU-PSMA THERAPY — A CASE REPORT

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Introduction: Adenoid Cystic Carcinoma (ACC) is a rare cancer, with challenging early diagnosis, characterized by slow growth and high rates of metastasis and recurrence. Effective therapeutic options are limited, particularly in advanced disease. 18F-FDG PET/CT is a fundamental tool for the diagnosis, staging and follow-up of ACC. Since Prostate-Specific Membrane Antigen (PSMA) has been shown to have high expression in ACC, it may be a useful theranostics tool to diagnose with PSMA PET/CT and treat with 177Lu-PSMA. Here, we present a case of metastatic ACC evaluated with 18F-FDG and 18F-PSMA PET/CT and treated with 177Lu-PSMA. **Case report:** A 48-year-old male patient was diagnosed with ACC of the right parapharyngeal space in 2008, being submitted to surgical resection and adjuvant radiotherapy, remaining disease-free for 13 years. In 2021, he developed ACC recurrence, characterized by multiple bilateral lung metastases, identified on 18F-FDG PET/CT scan and histopathologically confirmed by bronchoscopy. Systemic chemotherapy was initiated with Carboplatin plus Paclitaxel and later switched to Paclitaxel monotherapy due to toxicity; however, the patient developed treatment-related neuropathy. A new FDG PET/CT scan demonstrated progressive disease. At the end of 2023, the patient was enrolled in the research protocol aiming the compassionate treatment with 177Lu-PSMA. Pre-therapeutic evaluation with 18F-FDG PET/CT and 18F-PSMA PET/CT performed 24 hours apart demonstrated high uptake of both radiotracers in the lung nodules (FDG SUV >10 and PSMA SUV <9) and the patient was deemed eligible for treatment. The first therapeutic dose of 177Lu-PSMA (200 mCi) was administered in November 2025. The whole-body SPECT/CT images showed satisfactory radiotracer uptake in the pulmonary metastases. A second therapeutic dose of 177Lu-PSMA (200 mCi) was administered after 6 weeks. SPECT/CT whole-body images showed satisfactory radiotracer uptake as well. During follow-up, the patient experienced mild-to-moderate xerostomia after both 177Lu-PSMA treatment doses, as well as grade II nausea following the first administration. All adverse events were transient and resolved within four days, with no recurrent symptoms thereafter. The patient did not develop nephrotoxicity or hematological abnormalities. Follow-up interim PET/CT images will be performed after the 3rd cycle to define if there was a reduction in lesion volume. **Conclusion:** This case illustrates the applicability of PSMA PET/CT in metastatic Adenoid Cystic Carcinoma, facilitating patient selection for radionuclide therapy with 177Lu-PSMA. Adequate PSMA expression in pulmonary metastases and progressive uptake of 177Lu-PSMA, associated with good clinical tolerability and absence of hematological or renal toxicity, support this approach as a safe therapeutic option for ACC. Additional cycles and a large number of patients are needed to define if this therapeutic strategy is promising.

Keywords: Adenoid cystic carcinoma, Theranostics, 177Lu radioisotope, PSMA antigen,18F-FDG, PET-CT.

Conflicts of interest: The authors declare that they have no conflicts of interest.

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REVIEWS, SYSTEMATIC REVIEWS, AND META-ANALYSIS

73

SOCIAL INEQUALITIES IN CANCER: EPIDEMIOLOGICAL EVIDENCE AND IMPLICATIONS FOR PUBLIC HEALTH POLICIES

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Introduction: Social inequalities in health represent one of the most persistent challenges in contemporary public health, affecting populations in both low-income and economically developed countries. Socioeconomic factors such as income, education, place of residence, race/ethnicity, and living conditions strongly shape disease risk, access to health services, quality of care, and survival. Many of these differences constitute inequities, as they are avoidable, systematic, and socially unjust. Cancer is a key field in which such inequities are expressed, since major diagnostic and therapeutic advances coexist with marked social differences in incidence, stage at diagnosis, and mortality. Studying inequities in cancer therefore allows the understanding of structural mechanisms underlying health inequalities. In this context, population-based registries and health information systems are strategic tools to identify social gradients, monitor trends, and support targeted public health interventions, as illustrated by the study conducted in Campinas. **Objective:** Analyze social inequalities in cancer incidence and mortality and discuss their implications for public health policies using population-based data. **Materials and Methods:** A study was conducted in Campinas, Brazil, using data from the Population-Based