



IMPACT OF BODY COMPOSITION ON OUTCOME OF NON-SMALL CELL LUNG CANCER PATIENTS TREATED WITH FIRST-LINE IMMUNOTHERAPY

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Background and aims

Immunotherapy changed the treatment paradigm for patients with non-small cell lung cancer (NSCLC). Efforts were made to implement its action. In this light, this study aims to describe the pre-treatment body composition (BC) profile and explore the possible associations between these parameters and clinical outcomes in NSCLC patients receiving first-line Pembrolizumab monotherapy.

Methods

A retrospective review of consecutive advanced NSCLC patients treated with Pembrolizumab as first-line therapy at two academic medical institutions from August 2017 to October 2021 was performed. BC was detected using pre-treatment computed tomography scans at the L3 level. Data were correlated to progression-free/overall survival (PFS/OS) using a Cox and logistic regression model.

Results

Data from 102 patients (median age: 68 years [range 36-85]; median follow-up: 12 months [range 1-131]) were collected. More than a quarter of the patients were overweight or obese. Overall, 53.9% and 59.8% of patients met established radiographic criteria for evidence of sarcopenia and myosteatorsis, respectively. Sarcopenia and myosteatorsis were at significantly higher frequencies in patients with poor ECOG performance status (80% vs 48.2%, $p = 0.01$ and 81% vs 61.5%, $p = 0.041$, respectively). Median OS was 17.2 months; higher subcutaneous adipose tissue (HR 1.01, $p=0.017$) and higher visceral adipose tissue (VAT)/skeletal muscle area (SMA) ratio (HR 1.48, $p=0.016$) were significantly associated to OS. A ROC curve was constructed to obtain a VAT/SMA ratio cut-off for OS.

Conclusions

A pre-treatment BC assessment may be relevant in the clinical decision-making process before starting cancer immunotherapy and for effective patients' selection and stratification.

Keywords

Body composition; non-small-cell lung cancer; immunotherapy.

