



# ERS

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## Adipokines in cachexia of patients with lung cancer

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**Introduction:** Cancer associated cachexia is linked to altered metabolism in adipose and muscle tissue leading to clinically relevant weight loss. We aimed to find out whether several adipokines were associated with cachexia in LC patients.

**Methods:** Data on patients with LC (n=169, 67% males), tumours, metabolism, and adipokines were prospectively collected, and two control cohorts (COPD, n=98; never-smokers n=90), matched to age, BMI, gender. Bioelectrical impedance analysis quantified muscle mass and body fat. Adipose tissue plus muscle regions of interest were segmented manually in a transverse CT image (lumbar disc L3/L4). Plasma adipokines (leptin, adiponectin, irisin, neuregulin-4 [NRG4], FGF21, pref-1, activin A) were measured via ELISA. Statistics included group comparisons and correlations.

**Results:** LC patients showed higher levels of FGF21 and activin A and lower levels of adiponectin, irisin, NRG4, and leptin than COPD control. Compared to the healthy control, LC patients had higher levels of FGF21 and irisin while lower levels of adiponectin.

LC patients (60% stage IV) who presented at first diagnosis with cachexia (43%), malnutrition (17%), or increased Glasgow prognostic score showed reduced levels of leptin and NRG4, and increased levels of activin A. Higher leptin levels were associated with a lower muscle tissue area while higher Pref-1 levels with anorexia. FGF21 and adiponectin were increased in LC patients with cachexia or malnutrition. Higher adiponectin and activin A levels correlated with both lower adipose area and muscle tissue (body cell mass).

**Conclusions:** FGF21 and activin A were increased in LC patients compared to COPD patients and were associated with cachexia or malnutrition.