

Impact of sarcopenia in patients with advanced non–small cell lung cancer treated with PD-1 inhibitors: A preliminary retrospective study

Keywords: lung cancer, nivolumab, pembrolizumab, sarcopenia, muscle mass

Takayuki Shiroyama (Oncology Center of Osaka University Hospital), Atsushi Kumanogoh (Graduate School of Medicine, Osaka University/IFReC) and the research group retrospectively reviewed the medical records of all patients treated with nivolumab or pembrolizumab between January 2016 and September 2018 for previously treated advanced non–small cell lung cancer (NSCLC). The cross-sectional area of the psoas muscle at the level of the third lumbar vertebra on baseline computed tomography was assessed to calculate the psoas muscle index (PMI). Sarcopenia was defined based on PMI cut-off values for Asian adults (6.36 cm²/m² for males and 3.92 cm²/m² for females). A total of 42 patients were analysed. The prevalence of sarcopenia was 52.4%. Sarcopenia was significantly associated with poorer progression-free survival (PFS) (median, 2.1 vs. 6.8 months, $p = 0.004$). Compared to patients with sarcopenia, those without sarcopenia had a higher overall response rate (40.0% vs. 9.1%, $p = 0.025$) and 1-year PFS rate (38.1% vs. 10.1%). In conclusion, sarcopenia at baseline as determined using computed tomography is a significant predictor of worse outcome in patients with advanced NSCLC receiving PD-1 blockade. Screening for sarcopenia may help identify patients more likely to achieve a long-term response in routine clinical practice.

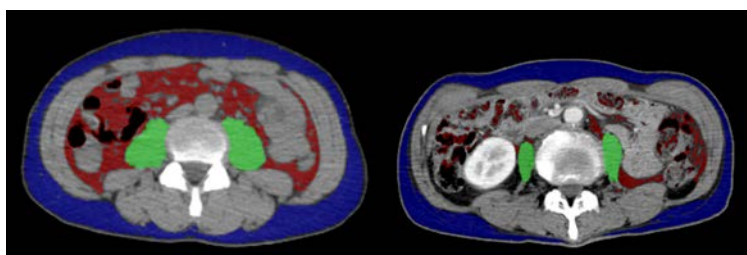


Figure: Evaluation of muscle mass by abdominal CT.

The large psoas muscle is shown in green. The muscle mass is sufficient (L), whereas the mass decrease (R).

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