Association of sarcopenia with dose-limiting toxicities and survival in oesophageal adenocarcinoma treated with neoadjuvant chemotherapy

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Background: Despite several recent studies the association of sarcopenia with outcomes in oesophageal adenocarcinoma (OAC); in particular overall survival and dose limiting toxicity (DLT), remains unclear likely due to the heterogeneity of the populations included. There is therefore a need for studies of sarcopenia utilising large homogenously treated cohorts.

Methods: We retrospectively collected data on DLT from 197 OAC patients treated with neoadjuvant chemotherapy at a single institution between August 2009 and September 2016. CT scans were visualised using the Worldmatch software package skeletal muscle at the L3 level was manually segmented. Published sex-specific cut-offs for skeletal muscle index (SMI) were used to classify patients as sarcopenic. Patients were further classified as sarcopenically obese if they had both sarcopenia and a BMI ≥ 30. Statistical analysis was completed using RStudio. Kaplan-Meier curves were plotted and differences in survival between sarcopenic and non-sarcopenic patients was analysed using a cox proportional hazards model. The Chi-squared test was used to analyse differences in toxicity between groups.

Results: Sarcopenia was observed in 81% of patients. There was no correlation with age and SMI (r = -0.1). Average SMI was greater in men than women (44.2 cm²/m² versus 33.7 cm²/m², male versus female). Sarcopenic patients had a worse overall survival than non-sarcopenic patients (median OS, 28.0 months versus 19.3 months, p = 0.0225). In contrast patients with sarcopenic obesity showed no difference in OS, in keeping with...
Conclusions: In our large homogenously treated cohort of patients undergoing neoadjuvant chemotherapy for OAC sarcopenia was associated with poorer OS confirming recent studies of smaller mixed populations.

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