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MUSCLE WASTING OF ≥10% DURING CHEMOTHERAPY IS INDEPENDENTLY ASSOCIATED WITH SURVIVAL

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Rationale: A low muscle mass is prevalent in up to 40% of patients with colorectal cancer and has been associated with poor outcome. Until now, longitudinal evaluation is lacking. This study aimed to investigate skeletal muscle changes of patients with metastatic colorectal cancer (mCRC) during palliative chemotherapy in relation to treatment modifications and survival.

Methods: We included 67 consecutive patients with mCRC, starting palliative chemotherapy (mean age 66.4±10.6 years, 63% male). Muscle area (cm^2) was assessed using L3 Computed Tomography scans before and during chemotherapy. Delay, dose reduction or termination of chemotherapy due to toxicity were regarded as treatment modifications. Six months and 1 year survival rates were obtained for the association between relative change in muscle area and survival (log-rank). Regression analyses, adjusted for confounders, were performed for the association with treatment modifications and overall survival.

Results: Muscle area decreased significantly during chemotherapy with 5.4% over 80 days (95%CI -7.4 to -3.3, $p<0.001$). Nineteen patients lost ≥10% of their initial muscle area. Change in muscle area was not associated with treatment modifications. Patients with ≥ 10% decrease in muscle area during chemotherapy had significantly lower survival rates than patients with <10% decrease (6 months 35% vs 65% and 1 year 21% vs 44%; log-rank p=0.01). Muscle loss of ≥10% remained independently associated with survival when adjusted for sex, age, baseline LDH concentration, comorbidity, mono- or multiorgan metastases, treatment line and tumour progression at 1st evaluation by CT scan (HR 3.3, 95%CI 1.6-6.7, p=0.001).

Conclusion: Muscle area decreased significantly during chemotherapy and was independently associated with survival. An RCT is required to investigate whether interventions like nutritional counseling and exercise training may preserve muscle area and improve outcome.

Disclosure of Interest: None Declared

Keywords: Colorectal cancer, Muscle mass