

Introduction As the prevalence of spinal metastasis rises, methods to predict survival will become increasingly important for clinical decision-making. Sarcopaenia may be used to predict survival in these patients. Our aim was to develop a prediction model for post-operative survival in patients with spinal metastasis. **Methods** This was a retrospective cohort of 200 patients undergoing operative intervention for spinal metastasis. Clinicopathological and survivorship data was collated. Sarcopenia was defined using the L3 Psoas/Vertebral Body Ratio on cross-sectional CT. Independent predictors of survival were assessed by multiple logistic regression. The primary outcome measure was 1 year post-operative survival. The secondary outcome measures were 3 month and 6 month post-operative survival. Statistical analysis was conducted using GraphPad Prism statistical software. **Results** Overall 1 year post-operative survival was 50%. L3/Psoas ratio ≥ 1.5 (OR 6.2), albumin ≥ 35 g/l (OR 3.0) and primary type were found to be independent predictors of 3 month, 6 month and 1 year post-operative survival on multivariable analysis. Age at surgery, ambulatory status and mode of presentation were not independent predictors of survival. Variables were used to generate a new scoring system to predict post-operative survival. This had greater correlation with post-operative survival than previous scoring systems. **Conclusion** This is the first model to incorporate sarcopaenia to predict survival in spinal metastasis patients and is more predictive than previous models in this cohort. This tool may be increasingly useful for informed decision making for patients and surgeons.