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https://escholarship.org/uc/item/65p3521q

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Publication Date

2023

Data Availability

The data associated with this publication are not available for this reason: N/A

Sarcopenia and Frailty as Predictors of Surgical Morbidity and Oncologic Outcomes in Retroperitoneal Sarcoma

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INTRODUCTION

Retroperitoneal sarcomas (RPS) are rare tumors accounting for 1%–2% of all solid malignancies and 10%–20% of sarcomas. Surgery is the main treatment modality for patients with RPS.

To date, there is no established model to predict perioperative risks for RPS patients.

In this study, we evaluate the association between preoperative sarcopenia, hypoalbuminemia, and frailty and 30-day perioperative morbidity and survival in patients with RPS undergoing surgical resection. Our goal is to determine the ability of these factors to predict surgical and oncological outcomes in these cases.

METHODS AND MATERIALS

Prospective cohort analysis of 65 RPS patients who underwent surgical resection.

Sarcopenia was defined as Total Psoas Area Index ≤ 1st quintile by sex.

Frailty was estimated using the modified frailty index (mFI).

Logistic regression models were used to assess predictors of 30-day postoperative morbidity.

The Kaplan–Meier method with log-rank test was used to assess factors associated with overall (OS) and recurrence-free survival (RFS).
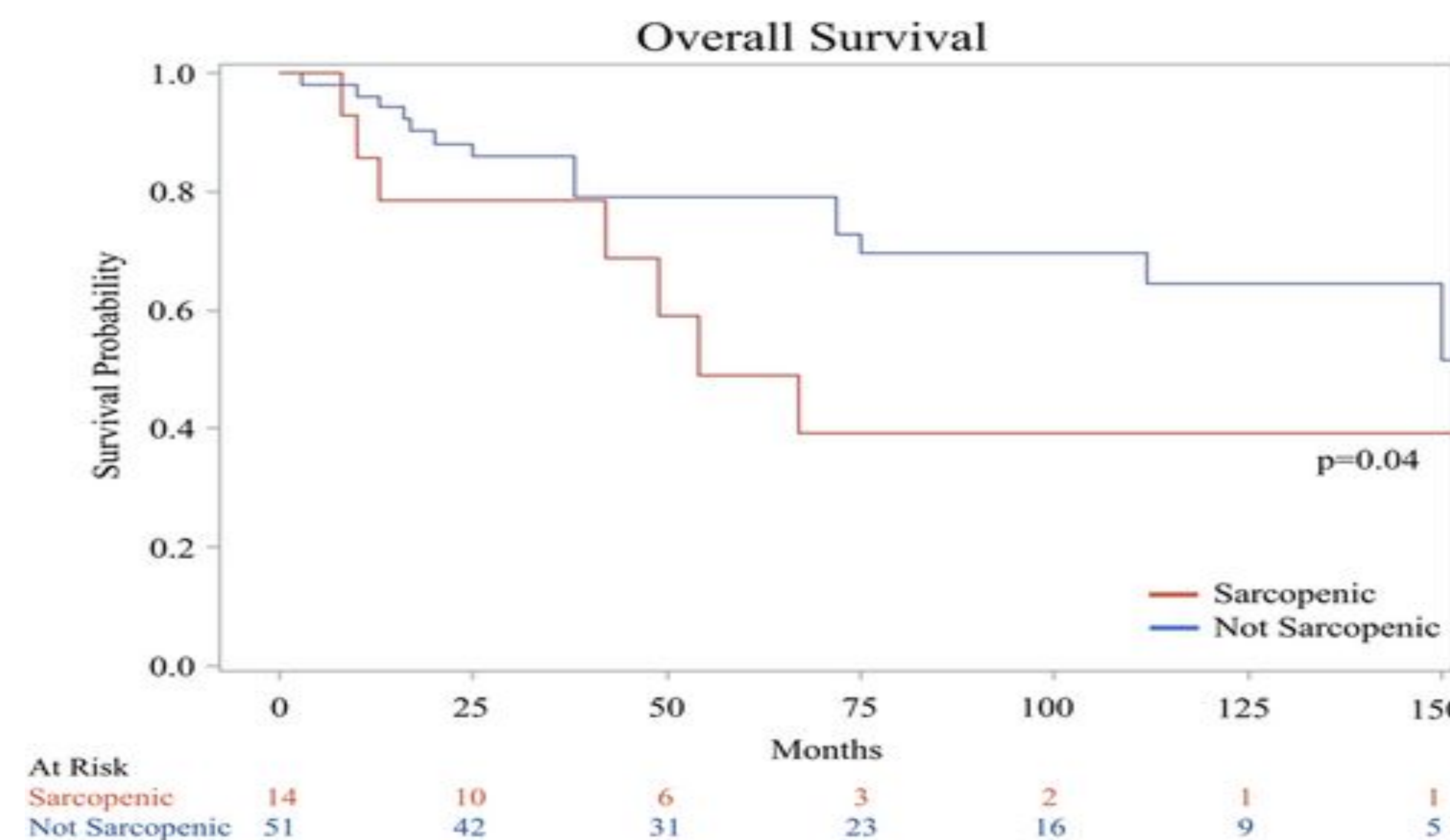
RESULTS

Figure 1. Overall survival of retroperitoneal sarcoma patients with and without sarcopenia.

Sarcopenia was associated with worse OS with a median of 54 compared with 158 months ($p = 0.04$), but no differences in RFS ($p > 0.05$).
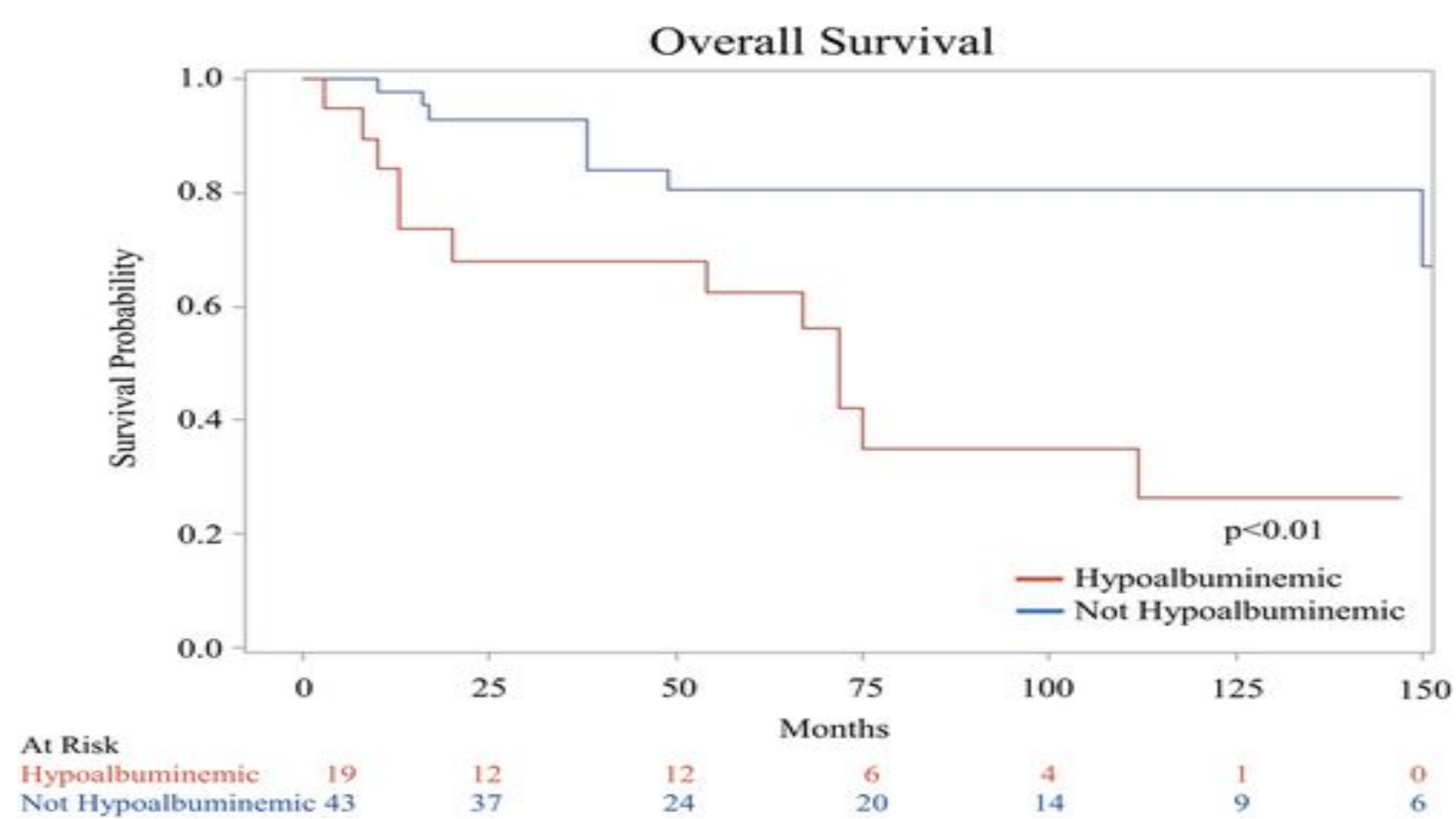

Figure 2. Overall survival of retroperitoneal sarcoma patients with and without hypoalbuminemia.

Hypoalbuminemia was associated with worse OS with a median of 72 compared with 158 months ($p < 0.01$). It was also associated with worse RFS ($p<0.01$).

	Serious morbidity		Overall morbidity	
	N (%)	p value	N (%)	p value
mFI score				
0	6 (24.0%)	0.08*	13 (52.0%)	0.33*
1	9 (36.0%)		11 (44.0%)	
2	7 (53.9%)		9 (69.2%)	
≥3	2 (100%)		2 (100%)	

Table 1. Modified frailty index and overall and serious morbidity.

MFI scores were not associated with OS or RFS ($p > 0.05$).

CONCLUSIONS

In the present study, sarcopenia and hypoalbuminemia were associated with worse OS in RPS patients. As such, these measures may be utilized to assess patient frailty to assist clinicians in determining the overall prognosis in RPS patients.

Despite the increasing acceptance of the mFI as a measure of patient preoperative frailty, mFI scores were not associated with a difference in serious or overall morbidity and overall survival.

These findings suggest that the mFI has limited utility in assisting clinicians in determining preoperative risk in RPS patients.

QR CODE

For more information about the study, please scan the QR Code of the published article.