Sarcopenia is associated with an unplanned readmission and worse survival following esophagectomy

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Introduction

Hospitalizations are serious outcomes resulting in adverse prognosis in older adults.

Malnutrition/dehydration and pneumonia are common reasons for unplanned readmission after esophagectomy.

Hu Y, *et al.* 2015 Stitzenberg KB, *et al.* 2015

Sarcopenia is associated with dysphagia and pulmonary complications following esophagectomy.

Wakabayashi H, *et al.* 2015 Ida S, *et al.* 2015

Our hypothesis

Sarcopenia may increase the risks of unplanned readmission and decrease the survival rate following esophagectomy.

Methods

Design & Setting

A prospective observational study conducted at the single university hospital

Eligibility

Patients with esophageal cancer who were scheduled to undergo esophagectomy

Definition of sarcopenia

In addition to low muscle mass (bioelectrical impedance), poor grip strength and/or slow walking speed according to the Asian consensus definition

Outcome

1. Unplanned readmission within 90-days after discharge (defined as any urgent hospitalization, excluding elective for adjuvant therapy)
2. One-year survival

Statistical analysis

Mann-Whitney U test, Fisher's exact test, and multivariate logistic regression analysis (previously shown risk factors were entered into a model)

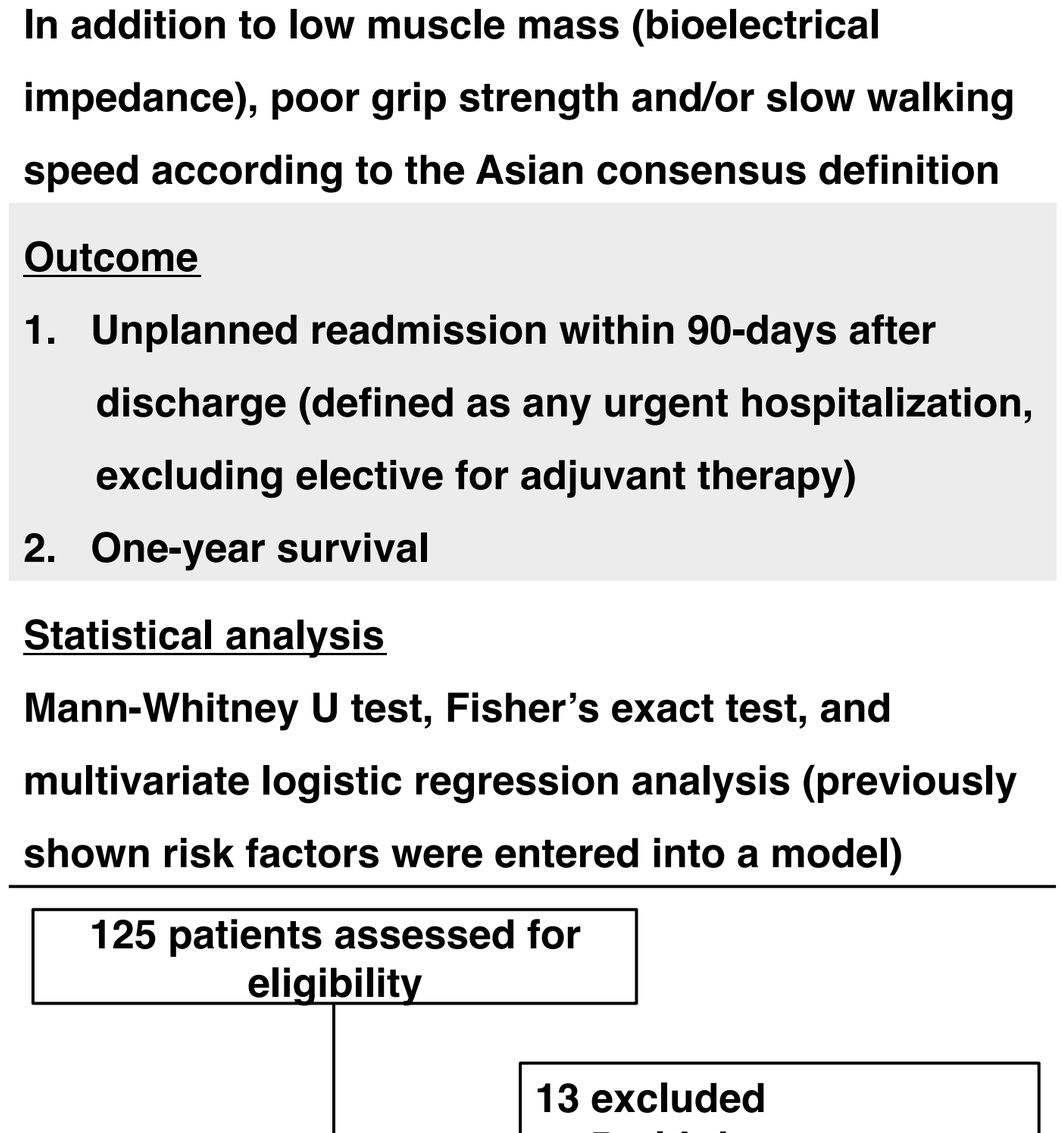

Figure 1. Flow diagram of participants

Results

Table 1. Patient characteristics

Variables		Sarcopenia (n = 31)	Non-sarcopenia (n = 67)	*P* value
Age		69 (65-75)	64 (61-70)	0.01
Sex				0.23
	Male / Female	24 / 7	59 / 8	
Pathological tumor stage				0.39
	0 / I / II / III / IV	1 / 7 / 9 / 14 / 0	0 / 24 / 17 / 25 / 1	
Charlson comorbidity index				0.37
	0 - 1	25 (80.6%)	45 (67.2%)	
	≧ 2	6 (19.4%)	22 (32.8%)	
Postoperative complications				
	Pulmonary	11 (35.5%)	12 (17.9%)	0.07
	Anastomotic leakage	4 (13.3%)	6 (9.0%)	0.49
	Vocal cord paralysis	9 (29.0%)	18 (26.9%)	0.81
90-day unplanned readmission		12 (42.9%)	11 (16.4%)	0.01
1-year survival		19 (61.3%)	56 (83.6%)	0.02

Table 2. Multivariate analysis for 90-day unplanned readmissions

Variables [reference]	Age [< 70]	Sex [female]	Sarcopenia [no]	Postoperative complications [no]
Model 1	1.79 (0.63 – 4.94)	1.74 (0.45 – 8.89)	3.77 (1.35 – 10.86)	-
Model 2	1.80 (0.64 – 5.00)	1.76 (0.45 – 8.96)	3.63 (1.28 – 10.64)	1.22 (0.44 – 3.40)

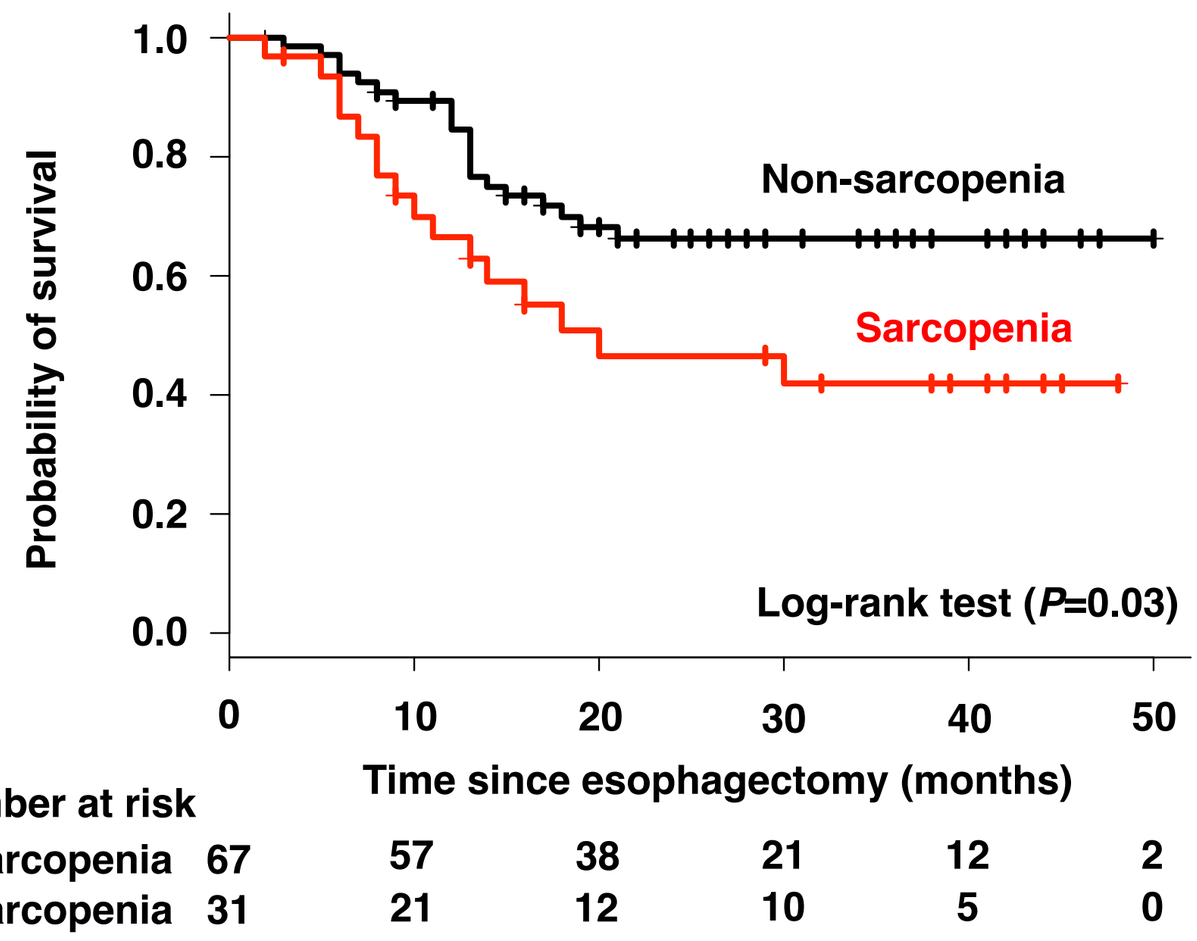

Figure 2. Kaplan-Meier survival curve stratified by sarcopenia status

Table 3. Multivariate analysis for 1-year survival

Variables [reference]	Age [< 70]	Sex [female]	Sarcopenia [no]	Tumor stage [< 3]
Model 1	0.86 (0.29 – 2.38)	1.03 (0.29 – 4.32)	3.31 (1.22 – 9.21)	-
Model 2	0.83 (0.25 – 2.50)	0.72 (0.18 – 3.23)	3.38 (1.16 – 10.36)	5.24 (1.87 – 16.43)

The 90-day unplanned readmission rate and 1-year mortality rate were significantly higher in sarcopenia group.
The most common reason for unplanned readmission was anastomotic stenosis (44.0%), and the second was dietary intake or fluid and electrolyte disorders (28.0%).
In multivariate analysis, sarcopenia was an independent predictor of both unplanned readmission and 1-year survival.

Conclusions

Sarcopenia may be a risk factor for unplanned readmission and worse survival following esophagectomy.