

BACKGROUND

- **Sarcopenia** is defined as a **progressive generalized depletion of skeletal muscle mass** that is observed in older patients and in certain diseases.
- The **psoas muscle index (PMI)** measured on pre-op Computed Tomography (CT) scans is an **easy to perform and accurate way to evaluate sarcopenia**.
- A number of recent studies have demonstrated an adverse association between sarcopenia and immediate and long-term patient outcomes following oncologic surgery.

AIM

- The aim of this study was to investigate the association between sarcopenia in patients undergoing surgery for gastric cancer and their post-operative outcomes.

MATERIALS & RESULTS

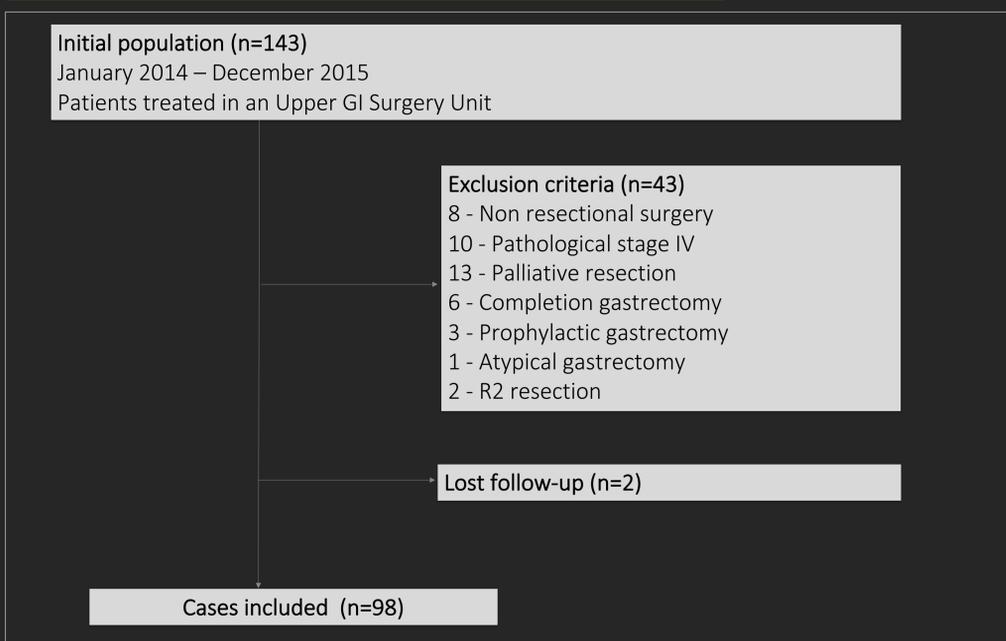


Figure 1. Flow chart of the study design

Table 1
Clinicopathological features of patients with gastric cancer

Age at surgery [years, median (IQR)]	68 (58 – 75)
Gender	
Male	62 (63.3%)
Female	36 (36.7%)
Surgery approach	
Open	37 (37.8%)
Laparoscopic	61 (62.2%)
Pathological stage	
I	47 (48.0%)
II	21 (21.4%)
III	30 (30.6%)
PMI [median (IQR)]	
Male	6.79 (5.36-7.95)
Female	4.32 (3.61-5.09)

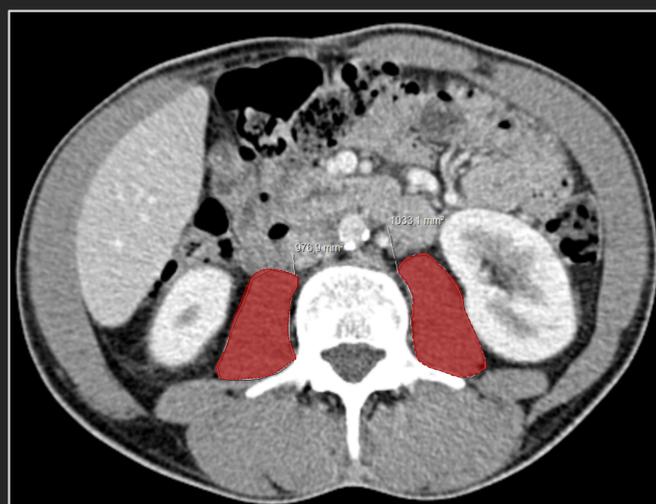
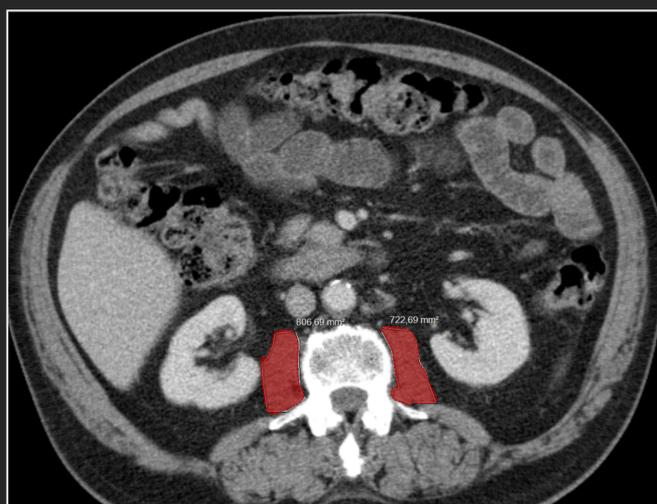


Figure 2. Measurement of Psoas Muscle Index (PMI). Psoas muscles areas (highlighted in red) were measured at the caudal level of L3.

Contrast-enhanced pre-operative CT scans were reviewed. Cross-sectional areas (cm²) of the psoas muscles at the level of L3 were measured using a standardized approach.

Psoas muscle area was adjusted to height, using the PMI which was calculated as:

$$\text{PMI} = \frac{\text{cross sectional areas of both psoas muscles (cm}^2\text{)}}{\text{height (m}^2\text{)}}$$

Table 2 – ROC curves adjusted to gender

	AUC	95% CI	P value
Males	0.754	0.584 – 0.925	0.006
Females	0.694	0.442 – 0.947	0.093

Table 3
Survival analysis according to PMI (cut-off value calculated according to Youden's method)

	HR	95% CI	P value
Overall Survival (OS)			
PMI	0.695	0.531 – 0.909	0.008
Male (cut-off 5.384)	0.230	0.080 - 0.664	0.007
Female (cut-off 3.682)	0.193	0.054 – 0.690	0.011

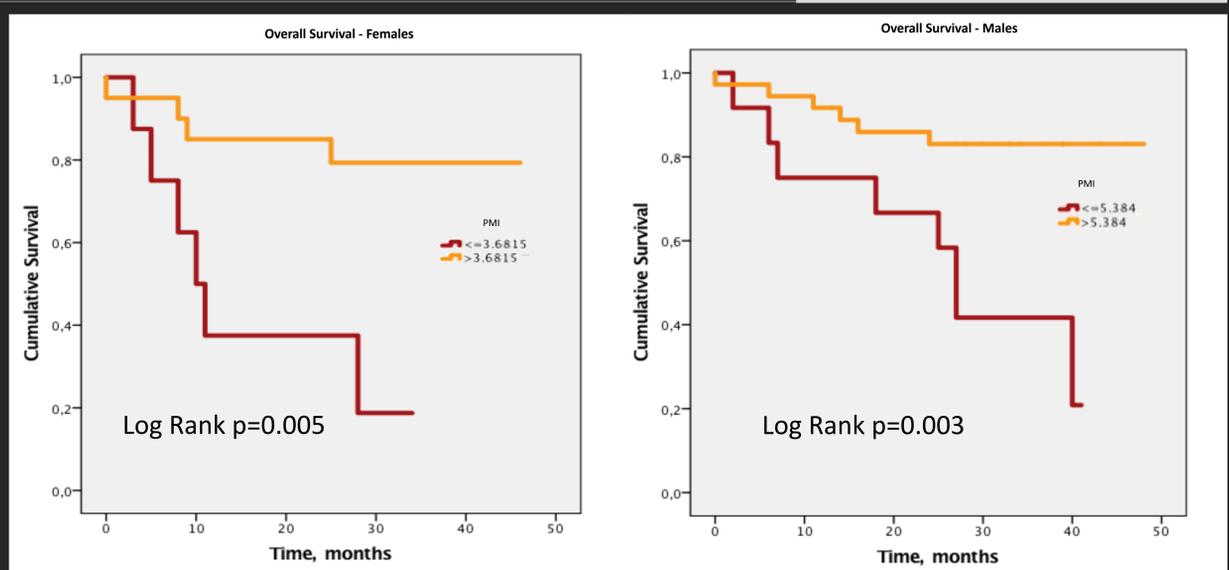


Figure 3. Overall survival according to PMI cut-off value adjusted to gender

CONCLUSION

- In this cohort, sarcopenia was a prognostic factor in gastric cancer patients submitted to curative surgery.
- **Lower pre-operative PMI was significantly associated with worse OS in this population.**
- Measurement and reporting of PMI on pre-op CT scans should be considered, so that patients with higher risk of mortality can be identified and managed.