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Original Article

Clinical Significance of the Psoas Muscle Index in Patients with Locally Advanced Gastric Cancer Receiving Perioperative Chemotherapy

Ömer Aydıner,[1] Akif Doğan,[2] Özkan Alan,[3] Sedat Yıldırım,[2] Goncagül Akdağ,[2] Zeynep Yüksel Yaşar,[2] Mahmut Emre Yıldırım,[2] Aysegul Karadayi Buyukozsoy,[1] Hatice Odabas,[2] Nedim Turan[2]

[1]Department of Radiology, University of Health Sciences, Kartal Dr. Lütfi Kırdar City Hospital, İstanbul, Türkiye
[2]Department of Medical Oncology, University of Health Sciences, Kartal Dr. Lütfi Kırdar City Hospital, İstanbul, Türkiye
[3]Division of Medical Oncology, School of Medicine, Koç University, İstanbul, Türkiye

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Correspondence: Akif Doğan, Kartal Dr. Lütfi Kırdar City Hospital, İstanbul, Türkiye
E-mail: drakifd@gmail.com

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ABSTRACT

Objective: The psoas muscle index (PMI) obtained with a single muscle measurement on routine computed tomography (CT) performed for staging in locally advanced gastric cancer (LAGC) is helpful in predicting whole-body sarcopenia. The objective of this trial was to determine the relationship between PMI and overall survival (OS) and disease-free survival (DFS).

Methods: This retrospective cohort was conducted with 122 patients with LAGC who underwent perioperative chemotherapy and curative surgery in our center between January 2015 and December 2021. PMI and psoas muscle density were calculated at the L3 vertebra level using routine CT performed for staging after the LAGC diagnosis, and its relationship with OS and DFS was examined.

Results: Twenty-nine of 122 patients were women. FLOT was the most common chemotherapy regimen and total gastrectomy was performed most frequently. The patients were divided into two groups according to the PMI values. OS and DFS were unachievable in the high PMI group, while OS and PFS were determined as 19 and 16 months, respectively, in the low PMI group. There was a statistically significant difference between the high and low PMI groups in terms of the two survival parameters (p=0.03 and p=0.001, respectively).

Conclusion: PMI measured on CT performed for staging in patients diagnosed with LAGC is an important and practical method in predicting the prognosis of the disease.

INTRODUCTION

Curative surgery with perioperative chemotherapy for locally advanced gastric cancer (LAGC) has become standard in many countries in Europe and America.[1] The overall survival (OS) after these standard treatments primarily depends on the patient's response to chemotherapy and performance status.[2] Protein-energy malnutrition is a common but neglected complication in LAGC. Routine laboratory tests can be used to assess nutritional status but have limited effectiveness. In sarcopenia, there is a progressive loss of muscle strength and mass, and it is a coplex syndrome.[3,4] Sarcopenia has recently attracted researchers' attention with its possible predictive value as a measure of performance and nutritional status.[3,4]

Various methods can be used in the detection of sarcopenia (imaging methods, bioimpedance analysis [BIA], and anthropometric measurements). Among these methods, computed tomography (CT) is one of the most prominent with its current place in the routine staging of gastric cancer, no additional cost or radiation exposure, and high re-

liability.[5,6] CT is frequently used to show sarcopenia based on the measurement of all skeletal muscles in a section at the level of the third lumbar vertebra (L3) and the skeletal muscle index (SMI).[6] However, this measurement is impractical because it requires both experience and special software.

Single skeletal muscle studies are becoming increasingly popular, and the psoas muscle index (PMI) is now frequently used to predict sarcopenia.[7,8] Many studies in the literature have examined the relationship between gastric cancer and PMI. However, some have been done on early-stage gastric cancer, investigating the relationship between PMI and survival and perioperative complications; others have focused on a relatively difficult methodology, examining the impact of reduced PMI on prognosis at follow-up.[9,10] There is only limited research adopting a more practical approach and evaluating the relationship between sarcopenia detected by PMI measured at the time of diagnosis and survival in LAGC.

Objectives

We aimed to examine the relationship between sarcopenia predicted by PMI and OS and disease-free survival (DFS) in patients who received perioperative treatment for LAGC.

MATERIALS AND METHODS

If a gastric cancer invades the muscularis propria and beyond, or has nodal involvement, it is defined as LAGC.[1] We included 122 patients in this study. Perioperative chemotherapy was started in all of the patients with the diagnosis of LAGC. Curative surgery could not be performed in 15 patients because they progressed radiologically after neoadjuvant therapy, and 2 patients were seen as inoperable during the operation. PMI and psoas muscle density (PMD) were calculated using abdominal CT images taken for staging at the time of diagnosis.

Ethical Considerations

Local ethics committee approval was obtained for this study (approval number 2022/514/234/24) and was conducted in accordance with the Declaration of Helsinki principles.

Patients

Only patients with an LAGC diagnosis, who started neoadjuvant therapy and underwent surgery, were included in the analysis. All the patients that received chemotherapy, radiotherapy, and chemoradiotherapy in line with the post-operative pathology results were reviewed. We excluded de novo metastatic patients and early stage patients. All the patients included in the study had normal hematological values and liver and kidney function test results, and their Eastern Cooperative Oncology Group performance status (ECOG-PS) was 2 and below. A performance status scale was determined by the ECOG to evaluate the progression of the disease and to evaluate whether activities of daily living were affected, and it was called the ECOG-PS.[11] We summarized the patient characteristics in Table 1.

Chemotherapy Regimens

According to the decision of the patients' follow-up physicians based on their current data at the time of treatment, the following neoadjuvant chemotherapy regimens were used:

• FLOT comprised 5-fluorouracil 2600 mg/m^2, leucovorin 200 mg/m^2, oxaliplatin 85 mg/m^2, and docetaxel 50 mg/m^2.

• DCF comprised 5-fluorouracil 3750 mg/m^2, leucovorin 200 mg/m^2, cisplatin 85 mg/m^2, and docetaxel 75 mg/m^2.

• CF comprised 5-fluorouracil 4000 mg/m^2, leucovorin 200 mg/m^2, and cisplatin 100 mg/m^2.

• FOLFOX comprised 5-fluorouracil 2400 mg/m^2, leucovorin 200 mg/m^2, and oxaliplatin 85 mg/m^2.

Sarcopenia Measurement

Images taken using the CT device at the hospital (Philips Ingenuity, 128-section) for staging purposes after the diagnosis were used to measure sarcopenia. Images were evaluated by experienced radiologists (more than 20 years, especially on abdominal imaging) who were unaware of all patient information, including clinical history. All the images were obtained from the hospital image archiving and communication system (Infinitt PACS® 3.0.11.4). Bilateral psoas muscle thickness, psoas muscle area (PMA), and PMD were measured from the transverse section at the third lumbar vertebral level (Figure 1).

PMI and PMD were calculated according to the following formulas: PMI = total PMA (cm^2)/height (m^2) and PMD = ([RPHU × RPA] + [LPHU × LPA])/([RPA + LPA]) where RPHU is the right mean psoas Hounsfield Unit density, RPA is the right psoas area, LPHU is the left mean psoas density in Hounsfield unit, and LPA is the left psoas area.

Statistical Analysis

We defined DFS as the time from histopathological diagnosis to disease relapse, death, or last visit. OS was defined as the time from histopathological diagnosis to death or the last visit. We summarized the clinical and demographic characteristics of the patients as descriptive statistics, using frequency and percentage for this. We tested whether our data fit the normal distribution with the Kolmogorov-Smirnov and Shapiro–Wilks test. Our parameters did not fit the normal distribution. We compared categorical variables with either the Chi-square or Fisher's exact test. We compared the median differences between two independent groups using the Mann-Whitney U-test. We estimated survival using the Kaplan–Meier method and the log-rank test. We performed univariate and multivariate analysis. We accepted the confidence interval (CI) as 95% and took the significance level as $p<0.05$. We performed statistical analyzes using SPSS version 24.0 (SPSS Inc., Chicago, IL, USA).

RESULTS

Of the 122 patients included in the study, 29 were women. We summarized the clinical and general demographic characteristics as shown in Table 1. PMI was statistically significantly higher in men ($p<0.01$), but there was no statistically significant difference compared to PMD. Table 2

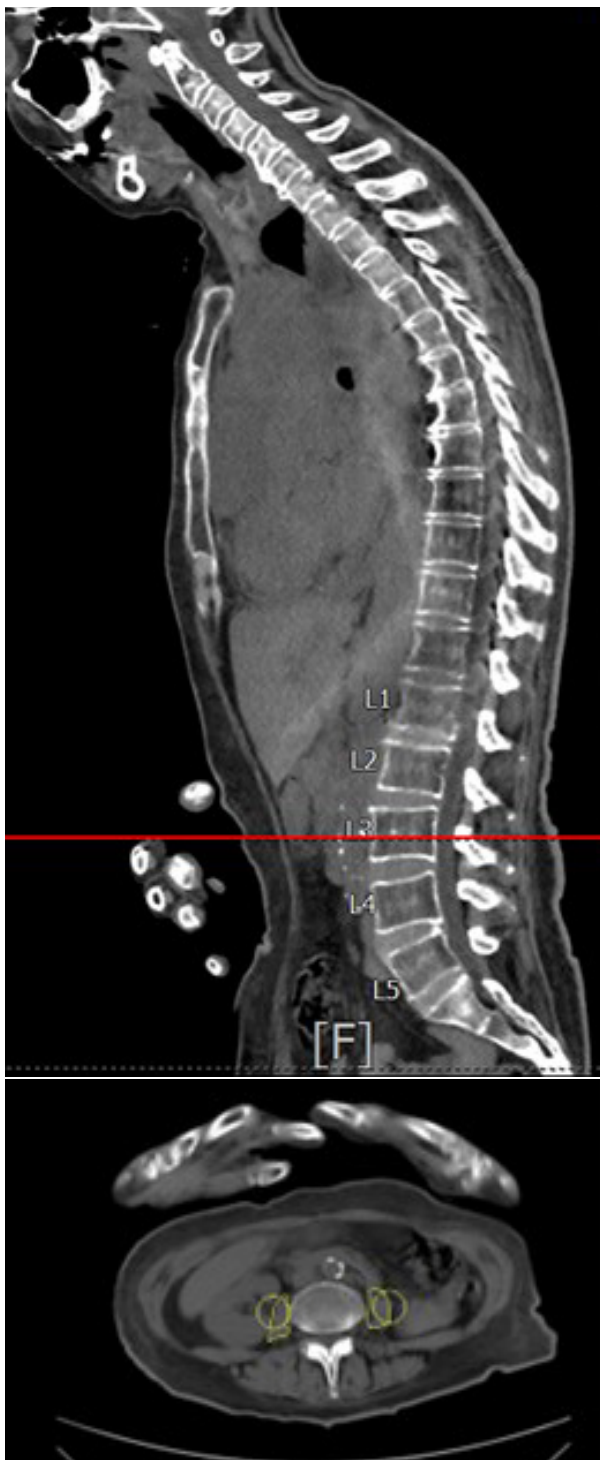


Figure 1. Measurement of the psoas muscle index using computed tomography at the L3 level.

Table 1. Baseline demographic and clinicopathologic characteristics of the study population

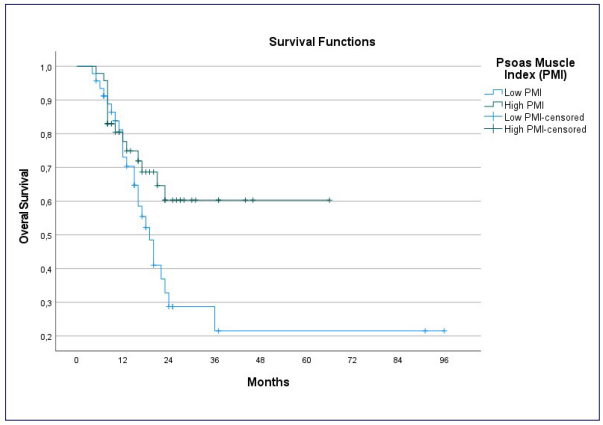
	Patients, n=122 (%)
Gender	
Female	29 (24)
Male	93 (76)
Age, median (range)	60 (27–87)
Body Mass Index, median (range)	25.5 (15.6–39.9)
Primary tumor location	
Gastroesophageal junction	5 (4)
Cardia	48 (39)
Corpus	30 (25)
Antrum	23 (19)
Linitisplastica	6 (5)
Unknown	10 (8)
Clinical stage	
T2N0	8 (6)
T3/T4aN0	11 (9)
T2N+	4 (3)
T3/T4N+	61 (48)
T4b any N	11 (9)
Unknown	27 (25)
Histology result	
Adenocarcinoma	91 (74.6)
Mucinous adenocarcinoma	3 (2)
Signet ring cell adenocarcinoma	18 (14.8)
Other	10 (8.2)
Tumor grade (n=118)	
Well-differentiated	5 (4)
Moderately differentiated	28 (26)
Poorly differentiated	75 (70)
Neoadjuvant chemotherapy	
CF	2 (1)
DCF	30 (24)
FOLFOX	7 (5)
FLOT	65 (56)
Other	18 (14)
Chemotherapy cycle, median (range)	4 (2–12)
Radiological response	
Complete response	6 (5)
Partial response	69 (57)
Stabil disease	30 (25)
Progressive disease	16 (13)
Surgery type	
Total gastrectomy	85 (70)
Subtotal gastrectomy	20 (16)
No curative surgery	17 (14)
Pathologic stage (n=83)	
Complete response	13 (10.7)
Stage 1	6 (4.9)
Stage 2	21 (17.2)
Stage 3	41 (33.6)
Stage 4	2 (1.6)
Adjuvant chemotherapy	
Yes	67 (55)
No	55 (45)
Adjuvant radiotherapy	
Yes	27 (22)
No	95 (78)
Recurrence (n=100)	
Yes	39 (39)
No	61 (61)
Outcome	
Survival	65 (53)
Mortality	57 (47)

Table 2. Whole-sample and gender-specific skeletal muscle measurements

		Gender		
	Patients (n=94)	**Female (n=29)**	**Male (n=93)**	**p-value**
Psoas muscle area (cm^2), median (range)	12.1 (1.3–27.04)	6.5 (1.33–22.83)	14.45 (1.89–27.04)	<0.001
Psoas muscle index (cm^2/m^2), median (range)	6.9 (0.81–15.07)	4.7 (0.81–13.05)	8.5(2.09–15.07)	<0.01
Psoas muscle density, median (range)	42.9 (13.5–92.7)	41.4(12.02–65.06)	43.5 (13.5–92.7)	0.23

Table 3. Relationship between skeletal muscle measurements and clinicopathologic characteristics

Findings	**Psoas muscle index**			**Psoas muscle density**		
	Low (n=46)	**High (n=48)**	**p-value**	**Low (n=58)**	**High (n=64)**	**p-value**
Gender						
Female	11 (24%)	10 (21%)	0.7	16 (29%)	13 (21%)	0.3
Male	35 (76%)	38 (79%)		42 (71%)	51 (79%)	
Age, median (range)	60 (27–77)	63 (38–81)	0.3	64 (27–81)	60 (28–77)	0.03
Body Mass Index, median (range)	24.6 (15.6–32.3)	27.4 (18.6–39.3)	0.01	27.3 (15.6–39.3)	25 (17.5–37.9)	0.4
Primary tumor location						
Gastroesophageal junction	4 (9%)	1 (2%)	0.4	1 (2%)	4 (6%)	0.7
Cardia	13 (28%)	21 (43,8%)		22 (38%)	26 (41%)	
Corpus	12 (26%)	9 (19%)		16 (28%)	14 (22%)	
Antrum	10 (22%)	10 (21%)		10 (17%)	13 (20%)	
Linitisplastica	2 (4%)	3 (%6)		3 (5%)	3 (5%)	
Other	5 (%11)	4(%8)		6 (%10)	4 (%6)	
Clinical stage						
T2N0	1 (2%)	3 (6%)	0.2	3 (5%)	5 (8%)	0.1
T3/T4aN0	3 (6%)	6 (12%)		7 (12%)	4 (6%)	
T2N+	1 (2%)	3 (6%)		0	4 (6%)	
T3/T4N+	26 (57%)	20 (43%)		28 (47%)	33 (52%)	
T4b any N	5 (11%)	2 (4%)		7 (12%)	4 (6%)	
Unknown	10 (22%)	14 (29%)		13 (24%)	13 (22%)	
Histology result						
Adenocarcinoma	38 (83%)	36 (75%)	0.4	47 (81%)	44 (69%)	0.1
Mucinous adenocarcinoma	0	2 (5%)		2 (3%)	1 (1%)	
Signet ring cell adenocarcinoma	8 (17%)	5 (10%)		8 (14%)	10 (16%)	
Other	0	5 (10%)		1(2%)	9 (14%)	
Neoadjuvant chemotherapy						
CF	0	2 (4%)	0.7	2 (3%)	0	0.3
DCF	9 (20%)	9 (19%)		11 (19%)	19 (30%)	
FOLFOX	3 (6%)	3 (6%)		3 (5%)	4 (6%)	
FLOT	25 (54%)	29 (61%)		34 (58%)	31 (49%)	
Others	9 (20%)	5 (10%)		9 (15%)	9 (15%)	
Chemotherapy cycle, median (range)	4 (3–6)	4 (3–12)	0.5	4 (3–11)	4 (3–12)	0.09
Surgery type						
Total gastrectomy	31 (67%)	36 (75%)	0.8	38 (65%)	47 (73%)	0.8
Subtotal gastrectomy	9 (20%)	8 (17%)		11 (19%)	9 (14%)	
No curative surgery	6 (13%)	4 (8%)		9 (16%)	8 (13%)	
Pathologic stage						
Complete response	3 (11%)	8 (21%)	0.3	6 (16%)	7 (15%)	0.2
Stage 1	1 (3%)	5 (13%)		4 (11%)	2 (4%)	
Stage 2	6 (22%)	8 (21%)		5 (13%)	16 (35%)	
Stage 3	17 (64%)	16 (42%)		21 (57%)	20 (43%)	
Stage 4	0	1 (3%)		1 (3%)	1 (3%)	
Adjuvant chemotherapy						
Yes	30 (65%)	28 (58%)	0.3	32 (56%)	35 (56%)	0.9
No	16 (35%)	20 (42%)		26 (44%)	28 (44%)	



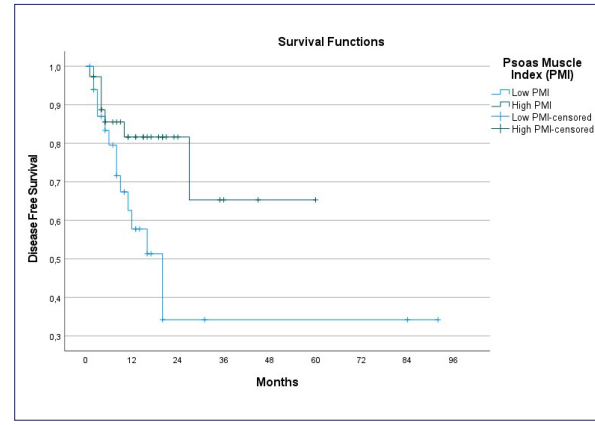


Figure 2. Overall survival according to the psoas muscle index.

presents the skeletal muscle measurements of the whole sample and according to gender.

Since the cutoff value of PMI could not be found in the receiver operating (ROC) analysis, the patients were divided into two groups based on the median value of both genders. The cutoff was taken as 4.7 for men and 8.5 for women. Accordingly, the low (<4.7 for women and <8.5 for men) and high (≥4.7 for women and ≥8.5 for men) PMI groups were formed.

No cutoff value was found for PMD in the ROC analysis, and therefore the patients were divided into two groups according to the median value, regardless of gender. The patients with a PMD value of <42.9 were included in the low PMD group, and those with a PMD value of ≥42.9 were included in the high PMD group.

There was no statistically significant difference between the high and low PMI groups in relation to the clinical and demographic findings, except age, and body mass index (BMI). The high PMI group had a statistically significantly higher mean BMI than the low PMI group (27.4 vs. 24.6, p=0.01). The high PMD group consisted of a younger population than the low PMD group, which was at a statistically significant level (60 vs. 64 years, p=0.03). The relationship between skeletal muscle measurements and clinicopathological characteristics is shown in Table 3.

There was a statistically significant difference between the high and low PMI groups in terms of OS and DFS (p=0.03 and p=0.001, respectively), (Figure 2a and b). While the median PFS was 16 months in the PMI low group (95%CI: 8.5–23.4), the median could not be reached in the high group. Similarly, while the median OS was 19 months in the low PMI group (95% CI: 15.5–22.4), the median OS could not be reached in the high group. However, there was no difference between high and low PMD groups in terms of the two survival parameters.

Table 4. Survival outcomes according to psoas muscle measurements

Outcomes	Psoas muscle index			Psoas muscle density		
	Low	High	p-value	Low	High	p-value
Recurrence						
Yes	21 (50%)	6 (15%)	0.001	19 (42%)	20 (36%)	0.5
No	21 (50%)	33 (85%)		26 (58%)	35 (64%)	
Disease-free survival						
Median (months)	16 (95% CI: 8.5–23.4)	Not reached	0.006	Not reached	Not reached	0.49
1 years (%)	56	83		77	71	
2 years (%)	32	83		50	61	
Outcome						
Survival	21 (46%)	33 (31%)	0.02	28 (48%)	37 (58%)	0.2
Mortality	25 (54%)	15 (69%)		30 (52%)	27 (42%)	
Overall survival						
Median (Months)	19 (95%CI:15.5–22.4.)	Not reached	0.03	17 (95%CI:13.3–20.6)	23 (95%CI:11.7–34.3)	0.16
1 year (%)	73	77		71	75	
2 years (%)	28	60		35	47	

CI: confidence interval.

Table 5. Univariate and multivariate analyses of factors in predicting overall survival

Variables	Univariate analysis		Multivariate analysis	
	HR (95%CI)	p-value	HR (95%CI)	p-value
Age				
<65	0.78 (0.44–1.38)	0.4		
≥65				
Gender				
Male	1.4 (0.51–3.6)	0.4		
Female				
Body Mass Index				
<25	0.69 (0.36–1.3)	0.25		
≥25				
Psoas Muscle Index (PMI)				
Low	0.51 (0.27–0.98)	0.04	0.60 (0.28–1.26)	0.177
High				
Psoas mucle Density (PMD)				
Low	0.7 (0.41–1.17)	0.1		
High				
Neoadjuvant Chemotherapy				
FLOT	0.51 (0.30–0.88)	0.01	0.45 (0.24–0.85)	0.014
Others				
Pathologic response				
Evre 0–1	3.79 (0.79–15.9)	0.06		
Evre 2–4				
Adjuvant Chemotherapy				
Yes	0.58 (0.35–0.96)	0.03	0.67 (0.35–1.27)	0.218
No				

HR: Hazard ratio; CI: Confidence interval.

In the low PMI group, median DFS was 16 months and median OS was 19 months. In the high PMI group, median DFS and OS were not reached. There was a statistically significant difference between the PMI low and high groups (p 0.006 and 0.03, respectively). There was no difference in DFS and OS with PMD in both groups. (Table 4) In univariate analysis, PMI (p=0.04), neoadjuvant and adjuvant chemotherapy (p=0.01, 0.03 respectively) were found to be significant prognostic factors for OS. Multivariate analysis determined FLOT chemotherapy regimen (p=0.014) as the only independent predictor of OS (Table 5).

DISCUSSION

In this study, we showed that the patients with high PMI values had better OS and DFS. To the best of our knowledge, this is the first study evaluating the relationship between PMI and survival in patients with LAGC, who all received neoadjuvant therapy.

Complaints related to eating (dysphagia, early satiety, loss of appetite, etc.) and weight loss are common in gastric cancer; therefore, when these complaints are accompanied by malnutrition and sarcopenia secondary to malignancy, it is not surprising to commonly encounter sarcopenia in patients with gastric cancer.[12] The previous studies have shown that sarcopenia adversely affects the prognosis of gastric cancer.[13] However, there is still no consensus on the optimal method to detect sarcopenia. Methods used to detect sarcopenia include imaging modalities (CT, magnetic resonance imaging [MRI], and dual energy X-ray absorptiometry [DEXA]), BIA, and anthropometric measurements.[14] Although BIA is frequently used as a non-invasive, inexpensive, and reproducible method, it is subjective, and the validity of its estimates has not been proven (due to the measurement of different body parts by various instruments and different mathematical methods being used in calculation).[15] There is also the possibility of error in anthropometric measurements, and they are less reliable. When imaging methods are considered, MRI is a time-consuming, difficult, and expensive technique, while DEXA presents as a simpler method with proven effectiveness in the detection of sarcopenia. In addition, CT has the advantages of being routinely performed for staging in newly diagnosed gastric cancer and not requiring additional cost or involving additional radiation exposure.[16,17]

There is no clear consensus on how to measure sarcopenia and which muscle/muscle group to be used in this mea-

surement on CT. Some studies have used SMI, obtained by the measurement of all muscles (psoas, erector spinae, quadratus lumborum, transverse abdominis, external and internal obliques, and rectus abdominus) passing through the transverse cross-sectional area in the third or fourth lumbar vertebral region,[18] while others have described the use of an index measured from a single muscle (psoas major, adductor pollicis, pectoral muscles, or masseter) as a new trend. Measurements performed from a single muscle are becoming more preferred because they are practical and easier to perform. In this regard, the most commonly used index is PMI obtained from the measurement of the psoas muscle.[19] In a study evaluating 1002 patients with colorectal cancer, Abbass et al. found that PMI and SMI were similarly associated with OS. Similarly, in a study by Zhang et al. conducted with 228 patients with hepatocellular cancer, PMI was reported to be as useful as SMI in predicting long-term survival.[20,21]

Many studies have examined the relationship between gastric cancer and PMI by including patients in early, locally advanced, and metastatic stages in their samples to investigate the relationship between PMI and OS and DFS, effect of decreased PMI on survival parameters, and the relationship between PMI and post-operative complications, and most have reported positive correlations.[9,10,22-24] In addition to being practical, PMI is as reliable as SMI and has become the preferred method in countries such as Turkey, where patient density is high and the number of physicians is insufficient.

In a study by Ito et al. with 88 patients aged over 80 years, who underwent endoscopic submucosal resection for early stage gastric cancer, a positive correlation was found between high PMI and survival.[25] In another study, Kano et al. included 31 stage 4 patients receiving nivolumab and reported PMI measured at the L3 level to be a risk factor for survival.[26] Fang et al. evaluated patients with stage 1–3 gastric cancer, who underwent laparoscopic gastrectomy, and detected a worse three-year OS in the low PMI group, similar to our study.[27] All the three studies mentioned above divided Asian adults into two groups as sarcopenic and non-sarcopenic according to the cutoff values specified in the previous research. In a retrospective study of Taniguchi et al. including a total of 567 patients with locally advanced cancer, 39 patients received neoadjuvant chemotherapy. According to the results, there was a significant relationship between low PMI and relapse-free survival,[28] which is consistent with our study.

Consistent with the literature, in our study, while receiving neoadjuvant FLOT chemotherapy was an independent predictive factor for OS,[1] PMI was not. The lack of a clear consensus on the PMI cutoff value; therefore, the median value for the PMI cutoff in our study may have caused this situation. Studies to be carried out after this deficiency in the literature is eliminated with population-based PMI cutoff determination studies may provide more reliable information.

Our study has certain limitations. First, it had a non-randomized retrospective design, and therefore there is a need for prospective studies to confirm our findings. Second, the mechanism underlying the association between low PMI and poor LAGC prognosis remains unclear. It may be associated with micrometastases and mediators released from tumor cells. Furthermore, in the literature, some studies have used cutoff values specified in the previous studies,[25-28] while others determined these values according to their study populations.[22-24,29] In the current study, we determined the cutoff value according to the study population, since there is not sufficient evidence to show the accuracy of the values detected in the previous studies on the determination of both SMI and PMI.[30] Finally, perhaps one of the most important limitations of our study, additional morbidities of the patients may not have been noted in the files, since our study was conducted in a very busy oncology unit. Therefore, it is difficult to comment on the additional diseases of our patients and their effects on their diseases in our study. Despite these limitations, the strengths of our study include the higher number of patients compared to previous studies in the literature and all the patients receiving neoadjuvant chemotherapy for LAGC.

Conclusion

Sarcopenia detected using PMI on CT at the time of diagnosis is as helpful as SMI in predicting prognosis in LAGC, and due to its more practical nature, it may be appropriate to use PMI in countries, such as Turkey, where patient density is high and the number of doctors is not sufficient for this density.

Ethics Committee Approval

This study approved by the Kartal Dr. Lütfi Kırdar City Hospital Clinical Research Ethics Committee (Date: 28.09.2022, Decision No: 2022/514/234/24).

Informed Consent

Retrospective study.

Peer-review

Externally peer-reviewed.

Authorship Contributions

Concept: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Design: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Supervision: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Materials: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Data: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Analysis: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Literature search: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Writing: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.; Critical revision: A.D., Ö.A., H.O., M.E.Y., N.T., S.Y., G.A., Z.Y.Y., A.K.B., Ö.Al.

Conflict of Interest

None declared.

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Perioperatif Kemoterapi Alan Lokal İleri Mide Kanserli Hastalarda Psoas Kas İndeksinin Klinik Önemi

Amaç: Lokal ileri mide kanserinde (LİMK) evreleme için yapılan rutin bilgisayarlı tomografide (BT) tek kas ölçümü ile elde edilen psoas kas indeksi (PMI), tüm vücut sarkopenisini öngörmede yardımcıdır. Bu çalışma ile amacımız PMI ile genel sağkalım (GSK) ve hastalıksız sağkalım (HSK) arasındaki ilişkiyi belirlemektir.

Gereç ve Yöntem: Bu retrospektif kohort, Ocak 2015 ile Aralık 2021 arasında merkezimizde perioperatif kemoterapi ve küratif cerrahi uygulanan LİMK'li 122 hasta ile gerçekleştirildi. PMI ve Psoas kas yoğunluğu (PMD), evreleme için yapılan rutin BT kullanılarak L3 vertebra seviyesinde hesaplandı. LAGC tanısından sonra, OS ve DFS ile ilişkisi incelendi.

Bulgular: 122 hastanın 29'u kadındı. FLOT en yaygın kemoterapi rejimiydi ve en sık total gastrektomi uygulandı. PMI değerlerine göre hastalar iki gruba ayrıldı. Yüksek PMI grubunda OS ve DFS ulaşılamazken, düşük PMI grubunda OS ve PFS sırasıyla 19 ve PFS 16 ay olarak belirlendi. İki sağkalım parametresi açısından yüksek ve düşük PMI grupları arasında istatistiksel olarak anlamlı fark vardı (sırasıyla, p=0.03 ve p=0.001).

Sonuç: LİMK tanılı hastalarda evreleme amacıyla yapılan BT'de ölçülen PMI, hastalığın prognozunu tahmin etmede önemli ve pratik bir yöntemdir.

Anahtar Sözcükler: Bilgisayarlı tomografi; mide kanseri; perioperatif tedavi; psoas kas indeksi.