PREVALENCE OF SARCOPENIC OBESITY AND ITS RELATIONSHIP WITH CLINICAL AND HEALTH PROGNOSIS IN PATIENTS WITH UROLOGICAL CANCER

Fernando Terziotti1, Mayra Bossa Borges2, Loriane Costa Godinho2, Vinicius de Souza2, Rafael Deminice2.

1 Hospital do Câncer de Londrina; 2 Universidade Estadual de Londrina;

Introduction

Sarcopenia has been frequently observed in cancer patients and is associated with reduced quality of life and survival. Recently, the coexistence of sarcopenia and obesity, termed sarcopenic obesity, can strongly impact the prognosis of the disease and the quality of life of cancer patients.

Objective

To determine the prevalence of sarcopenic obesity in patients with urological cancer undergoing surgical treatment and its association with clinical and health prognosis.

Methods

This was a cross-sectional study conducted with 34 men (mean age of 64.1 ± 12.1 years) diagnosed with urological cancer (comprising 52.9% bladder, 23.5% prostate, 17.8% kidney, 2.9% testicle, and 2.9% penis), evaluated for the presence of sarcopenic obesity before surgical treatment. Participants were subsequently divided into two groups: obese (n = 11) and sarcopenic obese (n = 11). The presence of sarcopenic obesity was determined according to the European Society for Clinical Nutrition (Donini et al., 2022), with BMI > 25 kg/m2 and low muscle strength (sit-to-stand test < 15 sec). Patients with BMI < 25 kg/m2 were excluded. Quality of life (EORTC QLQ-C30), physical function (Short Physical Performance Battery-SPPB), and clinical conditions (ECOG, R-Status, surgery and hospitalization time, presence of surgical complications) were used as parameters for clinical and health prognosis.

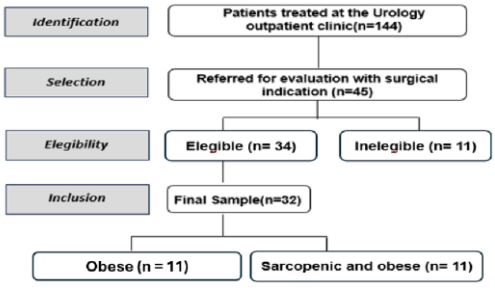

Figure 1. Flowchart for capturing participants, according to the Strobe Guideline.

Results

The prevalence of overweight + obesity (> 25 kg/m2) among the evaluated patients was 73.5%. Among obese, the prevalence of sarcopenic obesity was 50%. Patients with sarcopenic obesity had significantly ($p < 0.05$) lower muscle strength according to the sit-to-stand test, a lower physical function (SPPB score), worse quality of life (EORTC QLQ-C30 score), and longer hospitalization time compared to non-sarcopenic obese patients. There were no statistically significant differences found between obese patients and sarcopenic obese patients regarding BMI. The Pearson correlation test revealed significant inverse associations of muscle strength ($r = -0.58$, $p < 0.05$), physical function ($r = -0.63$, $p < 0.05$), and quality of life ($r = -0.75$, $p < 0.05$) with hospitalization time.

Table 1. Participants characteristics.

Variable	All (n=34)	Obese (n=11)	Sarcopenic and obese (n=11)	p-value
Age	64,1 ±12,1	59.9±8.7	68.2±9.7	0.4700
BMI (kg/m2)	28,58 ± 4,50	30.9±4.0	29.5±2.9	0.9117
Smoking History	17 (53%)	12 (63,2%)	5 (38,46%)	0,506
Drinking History	25 (78%)	16 (84,21%)	9 (69,2%)	0,488
Type of cancer				**0,015***
Bladder	14 (43%)	5 (45%)	5 (45%)	
Prostate	11 (34%)	4 (36%)	4 (36%)	
Kidney	5 (15%)	3 (27%)	2 (18%)	
Testicle	1 (3%)	1 (9%)	0 (0%)	
Penis	1 (3%)	0 (0%)	1 (9%)	
Stage T				
T1 -T2	11 (34%)	3 (27%)	4 (36%)	
T3 - T4	1 (2%)	1 (9%)	0 (0,0%)	
Stage N				
N1- N2	2 (6%)	2 (18%)	0 (0,00%)	
Stage M				
M1- M2	2 (6%)	2 (18%)	0 (0,0%)	
Chemotherapy	4 (12%)	3 (27%)	0 (0,0%)	
R-status				
R0	20 (62,5%)	6 (54%)	7 (63%)	0,103
R2	3 (9,37%)	2 (18%)	0 (0%)	
ASA				
I	5 (15%)	2 (18%)	3 (27%)	
II	16 (50%)	5 (45%)	5 (45%)	0,163
III	2 (6%)	1 (9%)	1 (9%)	
ECOG - PS				
0	17 (53%)	5 (45%)	6 (54%)	0,659
1	6 (18%)	2 (18%)	2 (18%)	

Legend: BMI (Body Mass Index), R-Status (Residual tumor), ASA: (American Society of Anaesthesiologists), ECOG-PS (scale do Eastern Cooperative Oncology Group- Performance Status).

Table 2. Physical and clinical variables.

Variable	Obese (n=11)	Sarcopenic and obese (n=11)	p-value
Hand grip strength (kg)	44.0±7.6	39.0±8.5	0.11
Appendicular Muscle Mass (kg)	24.2±3.2	22.9±3.1	0.19
Sit and up test (seconds)	11.9±2.4	19.1±3.7	**<0.05**
SPPB (score)	11,1±0,8	7,4±2,4	**<0.05**
Quality of life (score)	20,0±11,3	101,3±13,6	**<0.05**
Hospitalization stay (days)	2,2±0,4	4,3±1,6	**<0.05**
Surgery time (minutes)	54.4±79.5	109.4±105.4	0.24
Mortality	0	0	

Conclusion

Excessive weight and sarcopenic obesity are highly prevalent among men with urological cancer indicated for surgical treatment. Sarcopenic obesity is associated with low levels of physical function, quality of life, and longer hospitalization stay.

Grants: CNPq Conselho Nacional de Desenvolvimento Científico e Tecnológico

Contact: rdeminice@uel.br