Association between PG-SGA and lean mass determined by computed tomography in patients with cervical cancer

Fernanda de Oliveira Pereira, Izabel Cristina Ramos Cardoso, Mariah Azevedo Aredes, Gabriela Villaça Chaves
Department of Nutrition and Dietetics, National Cancer Institute José Alencar Gomes da Silva (INCA), Rio de Janeiro, Brazil

INTRODUCTION

The most frequent gynecological tumor is cervical cancer. In clinical practice, Scored Patient-Generated Subjective Global Assessment (PG-SGA) appears as a validated subjective assessment tool for cancer patients of low cost, easy and wide use. On the other hand, Computed Tomography (CT) is a gold standard instrument for determining body composition.

METHODS

This is a cross-sectional observational study carried out with women, over 18 years of age, diagnosed with cervical cancer enrolled in a cancer referral hospital in Brazil, who began the treatment between January 2015 and September 2017. Only patients who have PG-SGA and CT images of the third lumbar vertebra (L3), with maximum interval between them of 45 days, before starting treatment were included. Sociodemographic data and clinical information related to the treatment were collected. The skeletal muscle index (SMI) was used to classify sarcopenia, according to the cutoff point established for females (≤ 38.5 cm2/m2). The data obtained was analyzed anonymously with the statistical program Statistical Package for Social Sciences version 22.0. For all statistical analysis, a significance level of 5% has been adopted.

RESULTS

The study population consisted of 60 women (age 46.22 ± 11.79 years). The majority of sarcopenic patients were classified as malnourished by PG-SGA. The majority of patients with overweight were classified as euthrophic by SMI . Most of patients classified as score 1 in the muscle mass depletion or in the physical examination of PG-SGA were eutrophic by SMI (95%), and all those who were classified as the worst depletion score (score 4) were sarcopenic.

Table 1. Sociodemographic data, clinical information and nutritional status of the study population.

Variables	Results (n=60)
Age (years)[1]	46.22 ± 11.79
Ethnicity[2]	
White	15 (25)
Pardo (mixed races)	40 (66.7)
Indigenous	5 (8.3)
Marital status [2]	
Single	28 (46.7)
Married or Stable union	23 (38.3)
Divorced	4 (6.7)
Widow	5 (8.3)
Comorbidities[2]	
None	40 (66.7)
Arterial Hypertension	15 (25)
Diabetes Mellitus	4 (6.7)
Arterial Hypertension + Diabetes Mellitus	2 (3.3)
Dyslipidemia	1 (1.7)
Hypothyroidism	1 (1.7)
Histological type[2]	
SCC	52 (86.7)
AD	7 (11.7)
ADSQ	1 (1.7)
Cancer stage[2,3]	
Stage I	16 (26.7)
Stage II	27 (45)
Stage III	17 (28.3)
Type of treatment [2]	
Clinical	40 (66.7)
Surgical	20 (33.3)
BMI category[2]	
Underweight	5 (8.3)
Normal weight	17 (28.3)
Overweight	22 (36.7)
Obesity	16 (26.7)
PG-SGA classification[2]	
A (Well nourished)	20 (33.3)
B (Moderately malnourished)	36 (60)
C (Severely malnourished)	4 (6.7)
Parameters of body composition –Computed Tomography (CT) [2,4]	
Eutrophy	48 (80)
Sarcopenia	12 (20)

Scored Patient-Generated Subjective Global Assessment (PG-SGA); Body mass index (BMI); Squamous cell carcinoma (SCC); Adenocarcinoma (AD); Adenosquamous carcinoma (ADSQ) [1]Values expressed as mean (standard deviation); [2]Values expressed as absolute numbers (percentage); [3]Cancer stage classified as International Federation of Gynecology and Obstetrics (FIGO); [4]Determined through transversal cut at the height of the third lumbar vertebra according to cutoff point 38.9 cm^2/m^2.

Table 2. Associations between PG-SGA, BMI, physical exam score, muscle mass depletion score and the classification of skeletal muscle mass idex.

Variables		n	Eutrophy-SMI[2]	Sarcopenia-SMI[2]	p-value[1]
PG-SGA	A	20	19 (95)	1 (5)	0.037
	B + C	40	29 (72.5)	11 (27.5)	
BMI	Underweight	5	1 (20)	4 (80)	0.000
	Normal weight	17	11 (64.7)	6 (35.3)	
	Overweight	22	20 (90.9)	2 (9.1)	
	Obesity	16	16 (100)	0	
Physical Exam Score[3]	1	39	37 (94.9)	2 (5.1)	0.000
	2	13	9 (69.2)	4 (30.8)	
	3	6	2 (33.3)	4 (66.7)	
	4	2	0	2 (100)	
Muscle Mass Depletion Score[3]	1	40	38 (95)	2 (5)	0.000
	2	15	8 (53.3)	7 (46.7)	
	3	3	2 (66.7)	1 (33.3)	
	4	2	0	2 (100)	

CONCLUSION

PG-SGA is shown to be a useful and viable method that has a good association with SMI by CT, being a recommended method of nutritional assessment for patients with cervical cancer.

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