IMPACTO DA BAIXA MASSA MUSCULAR E MIOESTEATOSE SOBRE A MORTALIDADE DE PACIENTES COM COVID-19 EM HOSPITAL DO NORDESTE BRASILEIRO: COORTE RETROSPECTIVA

RESUMO

Introdução: A alteração de massa muscular no paciente com COVID-19 pode estar associada a sarcopenia e desfechos clínicos desfavoráveis. Neste contexto, insere-se a tomografia computadorizada (TC), como uma técnica de diagnóstico efetiva padrão-ouro para avaliar a massa muscular, que é um dos pilares para o diagnóstico de sarcopenia. **Objetivo:** Avaliar o impacto da baixa massa muscular e mioesteatose sobre a mortalidade de pacientes com COVID-19 hospitalizados em um hospital privado do nordeste brasileiro em dois períodos pandêmicos. **Casuística e Métodos:** Trata-se de um estudo do tipo coorte observacional, descritivo e retrospectivo, realizado no Hospital Aliança (Salvador-Bahia) com pacientes adultos e idosos, internados na unidade com o diagnóstico de COVID-19 no período de maio de 2020 a março de 2021. Foram selecionados pacientes admitidos durante dois meses de pico da pandemia (junho de 2020 e março de 2021) para avaliação da massa muscular e mioesteatose utilizando imagens da 12ª vértebra torácica (T12) via TC disponíveis no sistema. As variáveis nutricionais, sintomas relacionados à COVID-19, desfechos clínicos, comorbidades, testes laboratoriais, foram coletados dos prontuários eletrônicos dos pacientes. **Resultados:** Foram identificados 1.266 pacientes, sendo avaliado a quantidade e a qualidade da massa muscular de 277 indivíduos. A baixa massa muscular e a mioesteatose, apresentaram associação com maior risco de óbito em pacientes internados por COVID-19. **Conclusões principais:** A baixa massa muscular e a mioesteatose estão associadas significativamente

a maior mortalidade em pacientes com COVID-19, sendo que os pacientes com mioesteatose apresentaram um risco relativo de morte mais elevado (4,19 vezes).

Palavras-chaves: 1. Sarcopenia; 2. COVID-19; 3. Mortalidade; 4. Epidemiologia.

IMPACT OF LOW MUSCLE MASS AND MYOSTEATOSIS ON MORTALITY OF PATIENTS WITH COVID-19 IN A HOSPITAL IN NORTHEAST BRAZIL: RETROSPECTIVE COHORT

ABSTRACT

Introduction: Changes in muscle mass in patients with COVID-19 may be associated with sarcopenia and unfavourable clinical outcomes. In this context, computed tomography (CT) is an effective gold standard diagnostic technique for evaluating muscle mass, one of the pillars for diagnosing sarcopenia. **Objective:** To evaluate the impact of low muscle mass and myosteatosis on the mortality of patients with COVID-19 hospitalized in a private hospital in northeastern Brazil during two pandemic periods. **Casuistry and Methods:** This observational, descriptive, and retrospective cohort study was conducted at Hospital Aliança (Salvador-Bahia) with adult and elderly patients admitted to the unit diagnosed with COVID-19 from May 2020 to March 2021. Patients admitted during the two peak months of the pandemic (June 2020 and March 2021) were selected for muscle mass and myosteatosis assessment using images of the 12th thoracic vertebra (T12) via CT available in the system. Nutritional variables, symptoms related to COVID-19, clinical outcomes, comorbidities, and laboratory tests were collected from the patient's electronic medical records. **Results:** 1,266 patients were identified, and the quantity and quality of the muscle mass of 277 individuals were evaluated. Low muscle mass and myosteatosis were associated with a higher risk of death in patients hospitalized for COVID-19. **Main conclusions:** Low muscle mass and myosteatosis are significantly

associated with higher mortality in patients with COVID-19, with patients with myosteatosis having a higher relative risk of death (4.19 times).

Keywords: 1. Sarcopenia; 2. COVID-19; 3. Mortality; 4. Epidemiology.

Principais resultados

Table 1: Relative risk of low MM and myosteatosis on mortality of SARS-CoV-2 hospitalised patients admitted in June 2020 and March 2021.

Skeletal muscle mass characteristics	Deceased (42) n (%)	Discharged (235) n (%)	RR	p (x^2)
SMI-based low muscle mass				
Yes	23 (33.3)	46 (66.7)	3.64	0.000
No	19 (9.1)	189 (90.9)		
Myosteatosis				
Yes	18 (42.9)	24 (57.1)	4.19	0.000
No	24 (10.2)	211 (89.8)		

Table 2. Logistic regression-calculated factors associated with mortality in SARS-CoV-2 hospitalized patients admitted in June 2020 and March 2021.

	Coefficient	Standard error	Z Test	*p* value
Intercept	-6.2621	1.2185	-5.139	2.76e-07
Age (years, $\geq$ 65)	1.2452	1.0030	1.242	0.2144
Low muscle mass	1.1773	0.7769	1.515	0.1297
Myosteatosis	1.9320	0.8887	2.174	0.0297
Sex	0.3686	0.7309	0.504	0.6140
IMV	5.6033	0.8386	6.682	<0.000

IMV: Invasive mechanical ventilation.