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## INTRODUCTION

Stroke can lead to musculoskeletal and respiratory dysfunctions, chronic deconditioning and disability.<sup>1-3</sup> The aim was to evaluate the association between cardiopulmonary and peripheral muscle function in the acute phase of stroke and severity, dependence degree and functional capacity in long term.

## METHODS

46 patients with ischemic stroke

Admission at the Stroke Unit  
First 72 hours after stroke

## CARDIOPULMONARY FUNCTION AND PERIPHERAL MUSCLE FUNCTION

### Echocardiographic evaluation

Respiratory muscle strength (Maximal expiratory pressure);

Handgrip strength;

### Functional capacity

Modified Rankin Scale;

Barthel's index;

### Stroke severity

NIHSS at discharge and 90 days after hospital discharge.

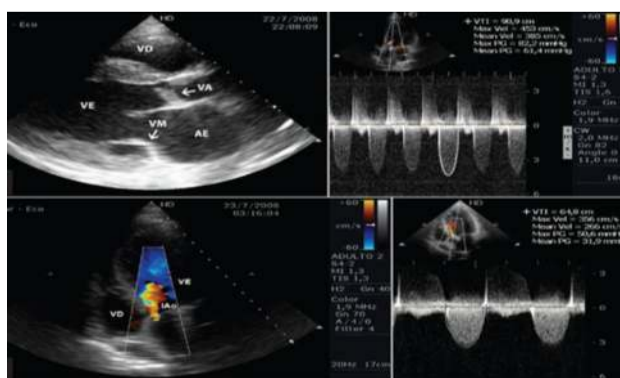
## EVALUATION PROCEDURE AND INSTRUMENTS



Handgrip strength



MEP



Formometric variables and systolic and diastolic function:

Mass VE / SC

Dimension AE

FEVE Teichholz

Reason E / A - Atrial filling and contraction velocity

Relationship E / e' - Diastolic velocity of the mitral flow and mitral annulus

## METHODS

### Statistical analysis

Multiple linear regression to verify the correlation between cardiopulmonary and peripheral muscle function and outcomes adjusted by confounding variables (NIHSS at admission, age and sex). Significance level 5%.

## RESULTS

TABLE 1

General characteristics of hospitalized patients with ischemic stroke (n=46)

Variables	N	%
Sex male	30	65.2
Age (years)		62.9 (42-76)
White race	37	80.4
Systemic arterial hypertension	35	76.1
Diabetes mellitus	9	19.6
Dyslipidemia		
NIHSS at admission		3.4 (0-10)
Thrombolysis	8	17.4
<b>Bamford</b>		
LACS	28	60.9
PACS	11	23.9
POCS	6	13.1
TACS	1	2.1
<b>TOAST</b>		
Undetermined	27	58.7
Cardioembolic	9	19.6
Small vessels	7	15.2
Large vessels	3	6.5

Results expressed as mean±standard deviation and number and percentage

TABLE 2

Long term association between cardiopulmonary and peripheral muscle function in acute stroke phase and severity and functional capacity (n=46)

	At hospital discharge	
	$\beta$	p
<b>Maximal expiratory pressure</b>		
NIHSS	-0.016	0.011
<b>Handgrip strength on the unaffected side</b>		
	$\beta$	p
mRs	-0.034	0.049
Barthel's Index	0.480	0.023
<b>90 days after hospital discharge</b>		
<b>The left ventricular mass corrected for body surface area</b>		
	$\beta$	p
mRs	-0.010	0.027
NIHSS	-0.012	0.021
Barthel's Index	0.051	0.048

NIHSS: National Institute of Health Stroke Scale; mRs: Modified Rankin Scale. The multiple linear regression test was used adjusted by NIHSS at admission, age and sex.

## CONCLUSION

In the acute phase of stroke, the worst cardiopulmonary and peripheral functions are related to the worst functional outcome 90 days after hospital discharge.

## REFERENCES

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