



# CORRELATIONS AMONG CALF CIRCUMFERENCE INDEX, SELECTED ANTHROPOMETRIC AND BIOCHEMICAL PARAMETERS AMONG PATIENTS OVER 60 YEARS

Justyna Nowak<sup>1</sup>, Karolina Kulik-Kupka<sup>1</sup>, Anna Brończyk-Puzoń<sup>1</sup>, Aneta Koszowska<sup>1</sup>, Paweł Jagielski<sup>2</sup>,

Ilona Korzonek-Szlacheta<sup>1</sup>, Barbara Zubelewicz-Szkodzińska<sup>1</sup>

1. Department of Nutrition Related Prevention, School of Public Health in Bytom, Medical University of Silesia.
2. Human Nutrition Department, Faculty of Health Science, Jagiellonian University Medical College, Kraków, Poland.

## INTRODUCTION:

Anthropometric parameters are easy and quickly methods of assess risks of many diseases.

## AIM:

The purpose of this study was to assess the correlation between calf circumference index, selected anthropometric (such as BMI, BAI, WHR, WHtR index) and biochemical parameters (such as concentration of 25(OH)D<sub>3</sub>, lipid profile, fasting glucose) among patients over 60 years.

## MATERIALS AND METHODS:

Cross sectional study was done in a group of 123 patients hospitalized in the Geriatric Department in 2013-2015 (66% of the group were women, N= 81). The study included patients above 60 years, without oral supplementation of vitamin D<sub>3</sub> 3 months before hospitalizations, without chronic kidney and liver diseases. Anthropometric parameters were measured in the morning, in light clothes in accordance with generally accepted methodology. Results of biochemical parameters were red from the patients' medical records. The obtained data were statistically analyzed using STATISTICA 10PL.  $\alpha=0.05$ .

## RESULTS:

	N	Mean	SD	Min.	Max.
Age [years]	123	75.66	7.47	61.00	90.00
Calf circumference [cm]	123	34.58	4.25	18.00	44.00
BMI [kg/m <sup>2</sup> ]	123	27.44	5.04	14.40	43.40
WHR	123	0.95	0.08	0.77	1.17
WHtR	123	0.61	0.08	0.43	0.83
BAI [%]	123	33.38	6.06	21.16	55.07
Concentration of :	N	Mean	SD	Min.	Max.
25(OH)D <sub>3</sub> [ng/ml]	96	15.35	6.65	6.00	49.10
Fasting glucose [mg/dl]	123	110.93	50.12	72.00	526.00
Total cholesterol [mg/dl]	121	204.32	51.21	91.00	394.00
HDL cholesterol [mg/dl]	121	57.09	19.94	18.00	140.00
LDL cholesterol [mg/dl]	121	125.82	42.85	43.00	281.00
Triglycerides [mg/dl]	121	115.87	57.05	43.00	372.00

□ There were observed positive correlation between calf circumference index and 25(OH)D<sub>3</sub> (R=0.23; p=0.0266); triglycerides (R=0.30; p=0.0007); BMI (R=0.75; p<10<sup>-6</sup>); WHR (R=0.47; p<10<sup>-6</sup>); as well as BAI (R=0.30; p=0.0008).

□ There were not observed statistically significant correlation of calf circumference index in relation to fasting glucose (R=0.13; p=0.1393); total cholesterol (R=0.13; p=0.1558); HDL cholesterol (R= -0.09; p=0.3264); LDL cholesterol (R=0.11; p=0.2233).

## CONCLUSION:

The study indicates that the measurement of calf circumference is an easy and fast methods which allow the assessment of concentration 25(OH)D<sub>3</sub> in group patients above 60 years.

