

# PHYSICAL ACTIVITY REDUCE HEPATIC APOPTOSIS IN PATIENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE AND VISCERAL OBESITY

Nataliia Dynnyk\*<sup>1</sup>, Anatolyy Svintsitsky<sup>1</sup>, Galyna Solovyova<sup>1</sup>, Volodymyr Bogomaz<sup>1</sup>, Olena Baka<sup>2</sup>, Olena Gurbych<sup>3</sup>, Yevgeniia Golovchanska<sup>4</sup>

<sup>1</sup>-Internal Medicine Department #3, Bogomolets National Medical University, <sup>2</sup>-Department of Gastroenterology, Hospital for scientists of the National Academy of Science of Ukraine, <sup>3</sup>-Department of Medical Rehabilitation, Physiotherapy and Sports Medicine, Shupyk National Medical Academy of Postgraduate education, <sup>4</sup>- National University of physical education and sport of Ukraine, Kyiv, Ukraine

## BACKGROUND

Physical activity is a hallmark of managing Nonalcoholic fatty liver disease according to nowadays European and USA guidelines and researches. Several studies show that any physical activity despite intensity reduces liver steatosis even without weight loss. But still there is a gap how to increase patient adherence for physical activity. Also scientists are looking for methods of reducing hepatic apoptosis as a main predictor of Nonalcoholic fatty liver disease progression, which can be measured by biomarker cytoke-  
ratin 18.

## OBJECTIVES

Our purpose was to investigate whether physical activity reduced liver apoptosis or not.

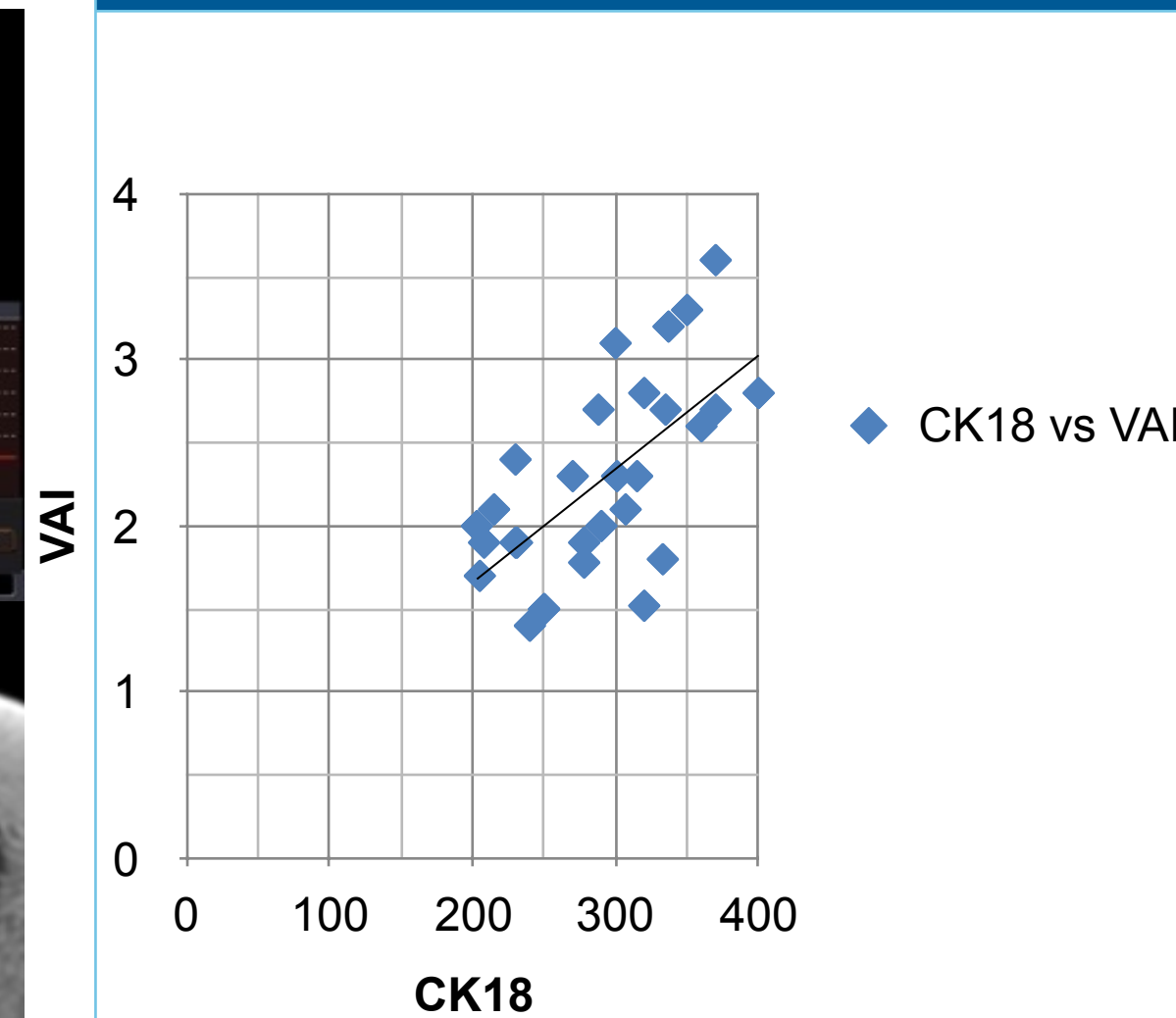
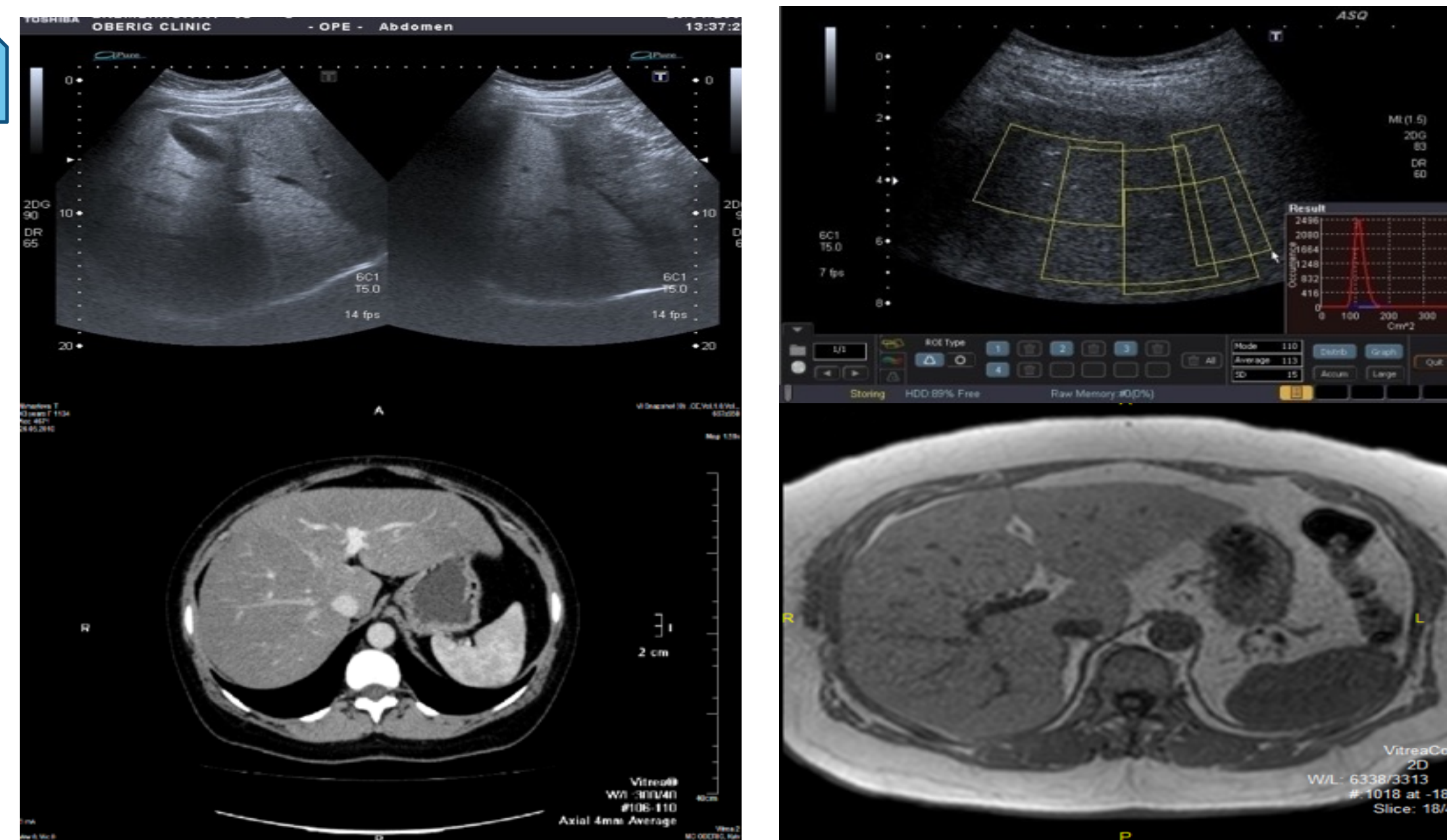
## MATERIALS & METHODS

58 patients were randomized in a two groups by age, gender and BMI. All of them had low level of physical activity and high level of Visceral Adiposity Index. The level of cytoke-  
ratin 18 fragments was measured by Elisa method. To patients from first group were given pedometers with recommendations of walking 10 000 steps per day, and to those from control group were just given general recommendations of changing sedentary behavior by improving physical activity without self and doctors control by using pedometers.

## RESULTS

Table 1.- Dynamic of clinical and laboratory parameters in main and placebo group

Parameter	Group	n	Main group	Placebo	Δ (abs)	p
			M (SD)	M (SD)		
CK18	Main	29	289.14 (45.6)	261.48 (42.3)	-27.66	0.017*
	Placebo	29	288.60 (55.6)	285.2 (54.5)	- 3.4	0.709
BMI	Main	29	27.47 (2.9)	26.94 (2.8)	-0.53	0.475
	Placebo	29	27.25 (2.6)	27.03 (2.9)	-0.22	0.460
VAI	Main	29	2.28 (0.46)	2.02 (0.42)	-0.25	0.034*
	Placebo	29	2.25 (0.54)	2.09 (0.49)	-0.16	0.426
WC	Main	29	92.65 (7.2)	88.51 (7.1)	-4.04	0.025*
	Placebo	29	92.52 (8.1)	90.40 (7.9)	-2.32	0.233
Fat percent	Main	29	28.19 (4.5)	27.05 (4.4)	-1.14	0.314
	Placebo	29	28.10 (4.6)	27.57 (4.5)	-0.56	0.164



## Contact Information

Nataliia Dynnyk  
dynkanat@gmail.com

## SUMMARY

We observed significant decreasing in cytoke-  
ratin18 fragments (289.14 ± 45.6 vs 261.48 ± 42.3 (P < 0.01) and Visceral Adiposity Index (2.28 ± 0.46 vs 2.02 ± 0.42 (P < 0.05) in group with controlling Physical activity by using pedometers after 12 weeks while Body Mass Index (27.47 ± 2.9 vs 26.94 ± 2.8 p=0.47) and body fat percentage (28.19 ± 4.5 vs 27.05 ± 4.4 p= 0.31) measured by using bioelectrical impedancemetry have not been significantly reduced.

## CONCLUSIONS

Changing sedentary behavior into brisk walking 10000 steps per day reduces not only visceral adiposity but also a level of hepatic apoptosis biomarker cytoke-  
ratin 18 in previously sedentary individuals with NAFLD even in the absence of weight loss and changes in BMI. Measurement of serum fragments level of CK18 can be used not only in the verification of steatosis and apoptosis degree in NAFLD patients, but also can be used in evaluation of therapy efficacy. And using pedometers can be recommended to patients with Nonalcoholic fatty liver disease and visceral obesity as they improve patient's adherence to physical activity.

## REFERENCES

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